Flight Performance, Planning and Loading

SL	Question	option_1	option_2	option_3	option_4
1.	Which of the following has references to aircraft mass and balance?	ICAO Annex 2.	ICAO Annex 4.	ICAO Annex 5.	ICAO Annex 6.
2.	The mass and centre of gravity of an aircraft must be established by actual weighing:	by the pilot on entry of aircraft into service	by the engineers before commencing service	by the operator prior to initial entry of aircraft into service	by the owner operator before the first flight of the day
3.	The operator must establish the mass of the Traffic Load:	prior to initial entry into service	by actual weighing or determine the mass of the traffic load	prior to embarking on the aircraft	by using an appropriate method of calculation
4.	The mass of the fuel load must be determined:	by the operator using actual density or by density calculation specified in the Operations Manual.	by the owner using actual density.	by the pilot using actual density or by density calculation specified in the Operations Manual.	by the fuel bowser operator using actual density or by density calculation specified in the Fuelling Manual.
5.	The Dry Operating Mass is the total mass of the aeroplane ready for a specific type of operation and includes:	Crew and passenger baggage, special equipment, water and chemicals	Crew and their hold baggage, special equipment, water and contingency fuel	Crew baggage, catering and other special equipment, potage water and lavatory chemicals	Crew and baggage, catering and passenger service equipment, potable water and lavatory chemicals.
6.	The Maximum Zero Fuel Mass is the maximum permissible mass of the aeroplane:	with no useable fuel	with no useable fuel unless the Aeroplane Flight Manual Limitations explicitly include it.	including the fuel taken up for take-off	including all useable fuel unless the Aeroplane Flight Operations Manual explicitly excludes it.
7.	The Maximum Structural Take-off Mass is:	the maximum permissible total aeroplane mass on completion of the refuelling operation.	the maximum permissible total aeroplane mass for take-off subject to the limiting conditions at the departure airfield.	the maximum permissible total aeroplane mass for take-off but excluding fuel.	the maximum permissible total aeroplane mass at the start of the take-off run.
8.	The Regulated Take-off Mass:	is the lower of maximum structural take-off mass and the performance limited take-off mass.	is the higher of the maximum structural zero fuel mass and the performance limited takeoff mass.	the maximum structural take-off mass subject to any last minute mass changes.	the maximum performance limited take-off mass subject to any last minute mass changes.
9.	The Take-off mass	the maximum permissible total aeroplane mass on completion of the refuelling operation.	the mass of the aeroplane including everyone and everything contained within it at the start of the take-off run.	the maximum permissible total aeroplane mass for take-off but excluding fuel.	the maximum permissible total aeroplane mass at the start of the take-off run.

10.	The Operating Mass:	is the lower of the structural mass and the performance limited mass	is the higher of the structural mass and the performance limited mass	is the actual mass of the aircraft on take-off	is the dry operating mass and the fuel load.
11.	The Basic Empty Mass is the mass of the aeroplane:	plus non-standard items such as lubricating oil, fire extinguishers, emergency oxygen equipment etc.	minus non-standard items such as lubricating oil, fire extinguishers, emergency oxygen equipment etc.	plus standard items such as unusable fluids, fire extinguishers, emergency oxygen equipment, supplementary electronics etc.	minus non-standard items such as unusable fluids, fire extinguishers, emergency oxygen and supplementary electronic equipment etc.
12.	The Traffic Load:	includes passenger masses and baggage masses but excludes any non-revenue load.	includes passenger masses, baggage masses and cargo masses but excludes any nonrevenue load.	includes passenger masses, baggage masses, cargo masses and any non-revenue load.	includes passenger masses, baggage masses and any non-revenue load but excludes cargo.
13.	The Operating Mass:	is the take-off mass minus the traffic load.	is the landing mass minus the traffic load	is the maximum zero fuel mass less the traffic load	is the take-off mass minus the basic empty mass and crew mass.
14.	The Traffic Load is:	The Zero Fuel Mass minus the Dry operating Mass	The Take-off Mass minus the sum of the Dry Operating Mass and the total fuel load.	The landing Mass minus the sum of the Dry Operating Mass and the mass of the remaining fuel.	all the above
15.	The Basic Empty Mass is the:	MZFM minus both traffic load and the fuel load	Take-off mass minus the traffic load and the fuel load	Operating mass minus the crew and fuel load	Landing mass less traffic load
16.	Is it possible to fly a certified aircraft at a Regulated Take-off mass with both a full traffic load and a full fuel load?	Some aircraft some of the time	All aircraft all the time	No, it is not possible!	Only if the performance limited take-off mass is less than the structural limited take-off mass.
17.	It is intended to fly a certified aircraft with both a full traffic load and a full fuel load.	The CG might be in limits all of the flight.	The CG limits will be in limits all of the flight.	The CG might not be in limits any of the time during the flight.	The CG will not be within the limits during the flight.
18.	The term `baggage' means:	Excess frieght	Any non-human, non-animal cargo	any frieght or cargo not carried on the person	personal belongings
19.	Certified Transport category aircraft with less than 10 seats:	may accept a verbal mass from or on behalf of each passenger.	estimate the total mass of the passengers and add a pre-determined constant to account for hand baggage and clothing.	may compute the actual mass of passengers and checked baggage.	all the above.
20.	When computing the mass of passengers	Personal belongings and hand	Infants must be classed as	Standard masses include	All of the above are correct.

	and baggage:	baggage must be included	children it they occupy a seat	infants being carried by an adult	
21.	When computing the mass of passengers and baggage for an aircraft with 20 seats or more:	Holiday flights and holiday charters attract the same mass values.	Standard masses of male and female in Table 1 are applicable.	Holiday Charter masses apply to Table 1 and Table 3 if the charter is solely intended as an element of a holiday travel package	All the above
22.	When computing the mass of passengers and baggage for an aircraft with 19 seats or less:	The standard masses in Table 2 apply	If hand baggage is accounted for separately, 6 kg may be deducted from the mass of each male and female.	Table 2 masses vary with both the gender (male or female) of the seat occupant and the number of seats on the aircraft.	All the above
23.	When computing the mass of checked baggage for an aircraft with twenty seats or more:	Mass is categorised by gender	Mass is categorised by departure	Mass is categorised by destination.	None
24.	On any flight identified as carrying a significant number of passengers whose masses, including hand baggage, are expected to exceed the standard passenger mass the operator:	must determine the actual mass of such passengers	must add an adequate mass increment to each of such passengers	must determine the actual masses of such passengers or add an adequate increment to each of such passengers.	need only determine the actual masses or apply an increment if the Take-off mass is likely to be exceede
25.	If standard mass tables are being used for checked baggage and a number of passengers check in baggage that is expected to exceed the standard baggage mass, the operator:	determine the actual masses of such baggage	must determine the actual mass of such baggage by weighing or by deducting an adequate mass increment.	need may no alterations if the Take-off mass is not likely to be exceeded.	Must determine the actual mass of such baggage by weighing or adding an adequate mass increment
26.	Mass and balance documentation:	must be established prior to each flight and must include the aircraft commanders signature to signify acceptance of the document.	must enable the commander to determine that the load and its distribution is such that the mass and balance limits of the aircraft are not exceeded.	must include the name of the person preparing the document and must be signed by the person supervising the loading to the effect that the load and its distribution is in accordance with the data on the document.	All the above
27.	Once the mass and balance documentation has been signed prior to flight:	no load alterations are allowed.	documented last minute changes to the load may be incorporated.	the documentation is not signed prior to flight.	acceptable last minute changes to the load must be documented.

28.	Aircraft must be weighed:	on initial entry into service and every four years after initial weigh	if the mass and balance records have not been adjusted for alterations or modifications.	whenever the cumulative changes to the dry operating mass exceed plus or minus 0.5% of the maximum landing mass and if the cumulative change in CG position exceeds 0.5% of the mean aerodynamic chord.	All of the above
29.	Aeroplane loading:	must be performed under the supervision of qualified personnel and must be consistent with the data used for calculating the mass and balance.	must comply with compartment dimension limitations and the maximum load per running metre	must comply with the maximum mass per cargo compartment	All of the above
30.	An average dry operating mass and CG position may be used for a fleet or group of aeroplanes:	if they are of the same model and configurationproviding the individual masses and CG positions meet specific tolerances specified in regulations.	providing appropriate corrections to mass and CG position are applied to aircraft within the fleet which have a physical, accurately accountable difference.	providing the dry operating mass of any aeroplane does not vary by more than 0.5% of the maximum structural landing mass of the fleet.	All of the above
31.	LMC (Last Minute Change) of load Documents is:	allowed if it is found of the last moment that CG is out of limit by 5%	allowed if it is found that actual pay load is 5% more than the acceptable pay load.	allowed for booth 'a' & 'b'	not allowed for any of 'a' or 'b'
32.	After loading of an aircraft for a flight it is found that pay load is acceptable by both mass and volume, but CG has gone slightly out of the limit:	flight will be released	some dead load will be off loaded to bring CG within limit	some passengers will be off loaded to brief CG within limit	reshuffle the load by calculating moment (armlength X mass) to bring the CG within limit.
33.	The operating mass of an aircraft is:	The dry operating mass plus the take-off fuel mass	The empty mass plus the take-off fuel mass	The empty mass plus crew, crew baggage and catering	The empty mass plus the trip fuel mass
34.	What effect has a centre of gravity close to the forward limit?	A better rate of climb capability	A reduction in the specific fuel consumption	A reduce rate of climb	A decreased induced drag
35.	The DOM of an aeroplane is:	TOM minus Operating Mass	LM plus Trip Fuel	Useful Load minus Operating Mass	TOM minus Useful Load
36.	The Traffic Load of an aeroplane is:	TOM minus Operating Mass	LM plus Trip Fuel	Useful Load minus Operating Mass	TOM minus Useful Load
37.	The TOM of a flight is:	OM plus pay load	LM plus trip fuel mass	ZFM plus take off fuel	All of the above

38.	Acceptable TOM of a flight of an aircraft is the:	minimum of regulated TOM, ZFM limited TOM and LM limited TOM	minimum of ZFM limited TOM and LM limited TOM	minimum of regulated TOM and LM limited TOM	minimum of regulated TOM and ZFM limited TOM
39.	refer to CAP 696 (SEP 1)Where is the reference datum?	74 inches aft of the fwd CG position	80.4 inches aft of the rear CG position	87.7 inches aft of the rear CG position	39 inches forward of the firewall
40.	refer to CAP 696 (SEP 1)What are the CG limits?	fwd limit = 74 inches to 80.4 inches	fwd limit = 74 inches, aft limit = 80.4 inches	fwd limit = 74 inches, aft limit = 87.7 inches	fwd limit = 74 inches to 80.4 inches and aft limit = 87.7 inches
41.	refer to CAP 696 (SEP 1) What is the CG at the BEM?	77 inches	87 inches	76.7 inches	77.7 inches
42.	refer to CAP 696 (SEP 1) What is the structural load limit for the floor at baggage zone `C'?	50 lb per square foot	100 lb per cubic foot	100 lb per square foot	100 kg per square inch
43.	refer to CAP 696 (SEP 1) What is the distance of the main undercarriage from the firewall?	97 inches	58 inches	87.7 inches	39 inches
44.	refer to CAP 696 (SEP 1) The aircraft has six seatsAssuming no other cargo or baggage, what is the maximum fuel that can be carried if all six seats are occupied and the mass of each occupant is 180 lb?	50 lbs but the CG would be dangerously out of limits	155 lbs but the CG would be dangerously out of limits	50 lbs and the CG would be in limits	1551bs and the CG would be in limits
45.	refer to CAP 696 (SEP 1) Where is the centroid of baggage zone B?	108 inches from the datum	120 inches from the datum	150 inches from the datum	180 inches from the datum
46.	refer to CAP 696 (SEP 1) Assuming the weight and access is not a problem where can a box of mass 500 lb be positioned if the dimensions are 0.75 ft x 1.5 ft x 5 ft?	in any of the baggage zones if placed on its smallest area	in zones `B' or `C' if placed on its largest area	in zone `C' only if placed on its middle area	in zone `A' only if placed on its largest area
47.	refer to CAP 696 (SEP 1) Assuming the weight and access is not a problem, where can a cubic box of mass 500 lb be positioned if the dimensions are 3.15 ft?	in any of the baggage zones	in zone `B' or `C' only	in zone `A' only	in zone `C' only
48.	refer to CAP 696 (SEP 1) If the landing mass is 3155lb and the trip fuel was 40 gallons, what was the ZFM if the fuel tanks held 60 gallons of fuel prior to take-off?	3001 lb	3035 lb	3098 lb	3111 lb
49.	refer to CAP 696 (SEP 1) What is the maximum ramp mass?	3650 lbs	3663 lbs	37801bs	3870 lbs

50.	refer to CAP 696 (SEP 1) How far is the main wheel from the aft CG limit?	0.7 inches behind the rear datum	0.7 inches forward of the rear datum	6.6 inches forward of the rear datum	9.3 inches aft of the rear datum
51.	refer to CAP 696 (SEP 1) How fair is the ifrewall from the fuel tank centroid?	36 inches	37 inches	38 inches	39 inches
52.	refer to CAP 696 (SEP 1) If the total moment is less than the minimum moment allowed:	useful load items must be shifted aft	useful load items must be shifted forward	forward load items must be increased	aft load items must be reduced
53.	refer to CAP 696 (SEP 1) The CG is on the lower of the fwd CG limits:	at a mass of 2500 lb and moment of 185000 lb in	at a moment of 175,000 lb in and a mass of 2350 lb	at a moment of 192,000 lb in and a mass of 2600 lb	all the above
54.	refer to CAP 696 (MEP 1) What performance class does the aircraft belong to?	Performance class `A'	Performance class `B'	Performance class `C'	Performance class `D'
55.	refer to CAP 696 (MEP 1) Where is the reference datum?	78.4 inches forward of the wing leading edge at the inboard edge of the inboard fuel tank	25.3 inches forward of the nose wheel	109.8 inches forward of the main wheel	all the above
56.	refer to CAP 696 (MEP 1) The main wheel is	19 inches forward of the fwd CG limit at the maximum take-off mass	27.8 inches behind the fwd CG limit at a take-off mass of 3400 lbs	15.2 inches forward of the rear CG limit at the maximum take-off mass	all the above
57.	refer to CAP 696 (MEP 1) The nose wheel is	56.7 inches forward of the fwd CG limit at maximum take-off mass	65.5 inches forward of the fwd CG limit at maximum take-off mass	69.3 inches aft of the rear CG limit at maximum take-off mass	all the above
58.	refer to CAP 696 (MEP 1) What is the minimum fuel mass that must be consumed if the aircraft, having become airborne at maximum weight, decides to abort the flight.	1260 lb	280 lb	237 lb	202 lb
59.	refer to CAP 696 (MEP 1) If the pilot has a mass of 200 lb, what is the maximum traffic load?	1060 lb	1600 lb	1006 lb	6001 lb
60.	refer to CAP 696 (MEP 1) Assuming the maximum zero fuel mass and maximum take-off mass, what fuel load can be carried?	38.9 Imperial gallons	46.6 US gallons	176.8 litres	any one of the above
61.	refer to CAP 696 (MEP 1) A box of mass 100 lb is to be transportedThe box dimensions are 9 x 9 x 12 inchesWhich	all zones, both the mass and structural loading are within limits	zones 2 and 3 only	no zones, both the mass and structural loading would be exceeded.	no zones, the structural loading would be exceede

	zones can it be carried in?				
62.	refer to CAP 696 (MEP 1) A box of mass 360 lb is to be transportedThe dimensions of the box are 1.7ft x 1.7ft x 1.8ftWhich zones can it be carried in?	zones 2 and 3only but placed on the 1.7 x 1.7 face	zones 2 and 3 only but placed on the 1.7 x 1.8 face	no zones, both the mass and structural loading would be exceeded	no zones, the structural loading would be exceede
63.	refer to CAP 696 (MEP 1) Assuming floor loading limits are acceptable, how much freight and fuel load can be carried for MTOM if the pilot's mass was 200lb?	A full load in each zone plus 380 lb of fuel	50 lb in zones 1 or 4 but full loads in each of the other zones, plus 280 lbs of fuel.	350lbs load in zone 4 but full loads in all the other zones, plus 280 lbs of fuel.	A full freight load in each zone plus 280 lb of fuel
64.	refer to CAP 696 (MEP 1) What is the maximum fuel tank capacity?	not given.	123 US gallons	46.6 US gallons	TOM minus ZFM
65.	refer to CAP 696 (MEP 1) If the aircraft is at MTOM with full fuel tanks and a pilot of mass 200 lb, what traffic load can be carried?	nil	579 lbs providing at least 20.5 gallons of fuel are consumed in start, taxi and flight	625 lbs providing at least 43.3 gallons of fuel are consumed in start, taxi and flight	759 lbs providing at least 59.5 gallons of fuel are consumed in start, taxi and flight
66.	refer to CAP 696 (MEP 1) The CG when the TOM is 4300 lb and the corresponding moment is 408500 lb in is	95 inches	59 inches	0.4 inches tail heavy	0.4 inches rear of the aft limit
67.	refer to CAP 696 (MEP 1)If the CG is 86 inches and the TOM is 4100 lb the aircraft is	just on the forward CG limit	just outside the forward CG limit	just inside the aft CG limit	within the two forward limits
68.	refer to CAP 696 (MRJT 1) All other parameters being acceptable, a box with a maximum and minimum running load of 12 kg/in and 7 kg/in and a mass of 800 kg can be fitted into:	any compartment of either the forward or aft cargo compartment	the front section of the aft cargo compartment or the rear section of the forward cargo compartment	the rear section of the forward cargo compartment or the rear section of the aft cargo compartment	the centre section of forward cargo compartment only
69.	Define the useful load:	traffic load plus usable fuel mass	dry operating mass plus usable fuel load	traffic load plus dry operating mass	that part of the traffic load which generates revenue
70.	Determine the position of the CG as a percentage of the Mean Aerodynamic Chord (MAC) given that the balance arm of the CG is 724 and the MAC balance arms are 517 to 1706	14.2	15.3	16.3	17.4
71.	If the maximum structural landing mass is exceeded:	The aircraft will be unable to get airborne	The undercarriage could collapse on landing	No damage will occur providing the aircraft is within the regulated landing mass.	No damage will occur providing the aircraft is within the performance limited landing mass.

72.	Using CAP 696, fig 4.-12 Assuming the fuel index moves minus 5.7 from the ZFM index, what is the take-off CG as a percentage of the MAC?	20.1	19.1	23	18.2
73.	Due to a mistake in the load sheet the aeroplane is 1000 kg heavier than you believe it to beAs a consequence:	V1, will be later	Vmu will be later	Vr will be later	V1,Vmu,Vr will all occur earlier
74.	If the aeroplane was neutrally stable this would suggest that:	the CG is forward	the CG is in mid range	the CG is on the rear limit	the CG is behind the rear limit
75.	Which of the following would not affect the CG?	Cabin crew members performing their normal duties.	Fuel usage	Stabilator trim setting	Mass added or removed at the neutral point
76.	The CG is	the point on the aircraft where the datum is located.	the point on the aircraft at which gravity appears to act.	the point on the aircraft from where the dihedral angle is measured.	the point on the aircraft where the lift acts through.
77.	The aircraft basic mass and CG position is found on	the weighing schedule and the aeroplane must be re-weighed if equipment change causes a change in mass or balance	On the loading manifest and is DOM - traffic load.	On the loading manifest and is ZFM - useful load	On the weighing schedule and is adjusted to take account of any mass changes.
78.	When determining the mass of fuel/oil and the value of the SG is not known, the value to use is:	determined by the operator (and laid down in the aeroplane OPS Manual. A pilot simply has to look it up)	set out in OPS manual	determined by the aviation authority	determined by the pilot
79.	In mass and balance terms, what is an index?	A cut down version of a force	A moment divided by a constant	A moment divided by a mass	A mass divided by a moment
80.	If an aeroplane comes into lands below its MSLM but above the PLLM for the arrival airfield:	A go-around might not be achievable.	Tyre temperature limits could be exceeded and Brake fade could occur..	It might not have sufficient runway length in which to stop safely.	All the answers are correct
81.	A twin engine aeroplane of mass 2500 kg is in balanced level flightThe CG limits are 82 in to 95 in from the nose position of the aeroplane and the CG is approximately mid rangeA passenger of mass 85 kg, moves from the front seat 85.5 inches aft of the nose to the rear seat157.6 inches from the noseWhat isthe new CG position approximately?	2.5 inches	87.5 inches	91 inches	92.5 inches
82.	103.6 in Datum 25.3 in 6 in 3450 N Left	BEM = 1489 kg and CG is 20	BEM = 1456 kg and CG is 20	BEM = 1489 kg and CG is 20	BEM = 1456 kg and CG is

		inches forward of datum	inches aft of the nose	inches aft of datum	89.6 inches aft of the nose
	Main =5550 N Right Main = 5610 N Calculate the Basic Empty mass and CG position for the MEP 1 shown above.				
83.	A twin engine aeroplane is certified for a MTOM and a MLM of 58000 kg and 55000 kg respectfullyWhat is the limiting take-off mass for the aeroplane? PLTOM 61000 kg PLLM 54000 KG MZFM 36000 kg Operating mass 55000 kg Trip fuel 30000 kg Contingency fuel 5% of trip fuel Alternative fuel 500 kg Final reserve 500 kg Flight duration 3 hours Fuel consumption 500 kg per hour per engine Useful load 41500 kg	58000 kg	61000 kg	56145 kg	56545 kg
84.	With reference to CAP 696 figure 4.9, the centroid of the forward hold is	half way between stations 228 and station 500	314.5 inches forward of the aft cargo bay centroid	367.9 inches from the datum	367.9 inches from the nose of the aeroplane. Refer to CAP 696
85.	The maximum aircraft mass excluding all usable fuel is:	fixed and listed in the aircraft's Operations Manual	variable and is set by the payload for the trip.	fixed by the physical size of the fuselage and cargo holds.	variable and depends on the actual fuel load for the trip.
86.	Just prior to take-off, a baggage handler put an extra box of significant mass into the hold without recording it in the LMC'sWhat are the effects of this action? The aeroplane has a normal, tricycle undercarriage.	Stick forces at VR will increase if the box is forward of the main wheels	VMU will occur later	The safe stopping distance will increase	all the above
87.	What is the maximum acceptable take-off mass, given: MTOM 43,000 kg MLM 35,000 kg PLLM 33,000 kg MZFM 31,000 kg DOM 19,000 kg Total Fuel capacity 12,500 kg Maximum Trip Fuel 9,000 kg Contingency fuel 1000 kg Alternate fuel 500 kg Final reserve fuel 400 kg	43,000 kg	42,000 kg	41,000 kg	40,000 kg
88.	What is the maximum mass an aeroplane can be loaded to before it moves under its own power?	Maximum Structural Ramp mass	Maximum Structural take-off mass	Maximum Regulated Ramp Mass	Maximum Regulated Take-off mass
89.	The weight of an aircraft in all flight conditions acts:	parallel to the CG	at right angles to the aeroplane's flight path	always through the MAC	vertically downwards

90.	If the CG moves rearwards during flight:	range will decrease	range will increase	stability will increase	range will remain the same but stalling speed will decrease
91.	The CG of an aeroplane is situated at 115.8 arm and the mass is 4750 kgA weight of 160 kg is moved from a hold situated at 80 arm to a hold at 120 armWhat would be the new CG arm?	117.14	118.33	118.5	120.01
92.	What is the effect of moving the CG from the front to the rear limit at constant altitude, CAS and temperature?	Reduced optimum cruise range	Reduced cruise range	Increased cruise range	Increased stall spee
93.	The baggage compartment floor-loading limit is 650 kg/m'What is the maximum mass of baggage that can be placed in the baggage compartment on a pallet of dimensions 0.8m by 0.8mThe pallet has a mass of 6 kg?	416 kg	1015 kg	650 kg	410 kg
94.	An aeroplane of 110,000kg has its CG at 22.6m aft of the datumThe CGlimits are 18m to 22m aft of the datumHow much mass must be removed from a hold 30m aft of the datum to bring the CG to its mid point?	26800 kg	28600 kg	86200 kg	62800 kg
95.	Where does the mass act through when the aircraft is stationary on the ground?	The centre of gravity	The main wheels	It doesn't act through anywhere.	The aerodynamic centre
96.	If an aircraft is weighed prior to entry into service who is responsible for doing the re-weigh to prepare the plane for operations?	The manufacturer.	The operator	The pilot	The flight engineer.
97.	An aeroplane has a tank capacity of 50000 Imperial gallonsIt is loaded with fuel to a quantity of 165000 kg (790 kg/m3)What is the specific gravity of the fuel and approximately how much more fuel could be taken up given that mass limits would not be exceeded?	0.73 46053 gallons	0.81 3940 gallons	0.72 46000 gallons	0.79 3946 gallons
98.	Define Balance Arm	BA = Mass / Moment	BA = Moment / Mass	BA = Mass / Distance	BA = Moment / Distance

99.	You have been given 16500 litres of fuel at SG 0.78 but written down is 16500 kgAs a result you will experience	heavier stick forces at rotation and improved climb performance.	heavier stick forces on rotation and distance to take-off increases.	lighter stick forces on rotation and calculated V1 will be too high.	lighter stick forces on rotation and V2 will be too low.
100.	The weight of an aircraft fully equiped for a particular flight excluding all payload is called	Operational weight	Basic weight	Operational empty weight	Takeoff weight
101.	Purpose of the weight and balance is to ensure	Center of graity within its limits	Weight weight within its maximum permissible empty weight	Weight within its maximum permissible basic weight	All above are correct
102.	The distance from the datum to the CG is:	the index	the moment	the balance arm	the station
103.	Individual aircraft should be weighed in an air conditioned hangar	on entry into service and subsequently every 4 years	when the effects of modifications or repairs are not known	with the hangar doors closed and the air conditioning off.	all the above.
104.	If a compartment takes a maximum load of 500 kg, with a running load limit of 350 kg/m and a distribution load limit of 300 kg/m2 maxWhich of the following boxes, each of 500 kg, can be carried?	100 cm x 110 cm x 145 cm	125 cm x 135 cm x 142 cm	120 cm x 140 cm x 143 cm	Any of the boxes
105.	For a conventional light aeroplane with a tricycle undercarriage configuration, the higher the take-off mass (assume a stab trim system is not fitted):	Range will decrease but endurance will increase	Gliding range will reduce	Stick forces at rotation and Stalling speed will increase	All are correct
106.	Due to a mistake in the load sheet the aeroplane is 100 kg heavier than you believe it to beAs a consequence:	V1 will be later	VMU will be	VR will be later	V1, VMU, VR will all occur earlier
107.	The CG position is:	set by the pilot	set by the manufacturer	able to exist within a range	fixed
108.	An aircraft is about to depart on an oceanic sector from a high elevation airfield with an exceptionally long runway in the tropics at 1400 local timeThe regulated take-off mass is likely to be limited by	MZFM	Obstacle clearance	Maximum certified Take-off mass	Climb gradient
109.	An aircraft is flying at 1.3 Vs in order to provide an adequate margin' above the low speed buffet and transonic speedsIf the l.3Vs speed is 180 kts CAS the mass increases from 285000 kg to 320000 kg,	146.7 kts, drag will increase and nautical mile per kg fuel burn will decrease.	191 kts, drag will increase and range nm/kg will increase.	191 kts, drag will increase and nm/kg fuel burn will decrease.	147 kts, drag will remain the same and nm/kg fuel burn will increase

	what is the new stalling speed?				
110.	The CG datum has to be along the longitudinal axis:	between the nose and the tail.	between the leading and trailing edge of the MAC.	but does not have to be between the nose and the tail.	at the fire wall.
111.	The useful load is:	TOM - fuel mass	BEM plus fuel load	TOM minus the DOM	TOM minus the operating mass
112.	Standard masses for baggage can be used for aircraft with:	9 seats or more	20 seats or more	30 seats or more	less than 30 seats
113.	If an aeroplane comes into lands below its MSLM but above the PLLM for the arrival airfield:	A go-around might not be achievable.	Tyre temperature limits could be exceeded and Brake fade could occur..	It might not have sufficient runway length in which to stop safely.	All the answers are correct
114.	What is the zero fuel mass?	MTOM minus fuel to destination minus fuel to alternative airfield.	Maximum allowable mass of the aircraft with no usable fuel on board.	Operating mass minus the fuel load.	Actual loaded mass of the aircraft with no usable fuel on boar
115.	An aeroplane develops a serious maintenance problem shortly after take-off and has to return to its departure airfieldIn order to land safely the aircraft must jettison fuelHow much fuel must be jettisoned ?	Sufficient to reduce the mass to the zero fuel mass	The pilot calculates the amount of fuel to jettison to reduce the mass to a safe level at or below the RLM.	The fuel system automatically stops the jettison at the RLM.	As much as the pilot feels is just insufficient to land safely
116.	Pay load of a flight is:	ZFM minus DOM	TOM minus operating mass	LDM minus DOM minus remaining usable fuel.	all the above.
117.	The International Standard Atmosphere defines an atmosphere where (i) Sea level temperature (ii) Sea level pressure (iii) Sea level density (iv) temperature lapse rate are: (i) (ii) (iii) (iv)	15°C 1013 mb 1.225 kg/m3 1.98°C/1000m	15°C 1013 mb 1.225 kg/m3 6.5°C/1000 m	0°C 1.013 Bar 1225 g/m3 1.98°C/1000 ft	15°C 29.92 in.Hg 1013 kg/m3 1.98°C/1000 ft.
118.	The Service Ceiling is the pressure altitude where	the rate of climb is zero	the low speed and high speed buffet are coincident	the lift becomes less than the weight	the rate of climb reaches a specified value
119.	The Gross performance of an aircraft is	the average performance achieved by a number of aircraft of the type.	the minimum performance achieved by a number of aircraft of the type	the average performance achieved by a number of aircraft of the type reduced by a specified margin	the minimum performance achieved by the individual aircraft reduced by a specified margin.
120.	The Mach number is the ratio of	True Air speed : Speed of sound at sea level	Indicated Air speed : local speed of sound	True Air speed : Local speed of sound	True Air speed : Speed of sound in ISA conditions
121.	The Clearway at an aerodrome is an area beginning	at the end of the stopway, with a width equal to the runway	at the end of the runway, having a minimum required	at the end of the runway, with a minimum width of 60	at the end of the runway, clear of obstacles and

		width, and clear of obstacles.	width, disposed equally about the extended centre line, with no obstacles protruding above a plane sloping upwards with a slope of 1.25%	m each side of the centre line and clear of obstacles.	capable of supporting the weight of the aircraft during an emergency stop.
122.	Which of the following statements is correct	Gross gradient is less than net gradient	Gross take-off distance is less than net take-off distance	Gross landing distance is greater than net landing distance	Gross acceleration is less than net acceleration
123.	An aerodrome has a pressure of 1013 mb and a temperature of 25°C, the (i) pressure altitude and (ii) density altitude are :	Sea level Sea level	above sea level below sea level	sea level above sea level	below sea level above sea level
124.	Assuming that the acceleration is constant during the take-off, if the take-off speed is increased by 3%, the Take-off distance will increase by	0.03	6	0.09	0.12
125.	The forces acting on an aircraft during the take-off run are	Lift, thrust and drag	Lift, weight, aerodynamic drag, thrust	Lift, weight, aerodynamic drag, wheel drag, thrust	Weight, thrust, drag.
126.	During the take-off run the thrust of a jet engine	Is decreased due to ram effect	Is increased due to intake momentum drag	Is decreased due to reducing difference between jet velocity and aircraft velocity	Is increased due to increasing intake ram temperature rise.
127.	A "flat rated" jet engine will give	a constant thrust for temperatures below a cut-off value	a constant thrust for temperatures above a cut-off value	decreasing thrust as temperature decreases below a cut-off value	increasing thrust as temperature increases above a cut-off value
128.	For a jet engine without limiters, thrust will increase as a result of	Increased pressure altitude	Increased ambient temperature	Decreased pressure altitude	Increased atmospheric humidity
129.	As speed increases the thrust of a fixed pitch propeller will	Decrease to a constant value	Increase to a constant value	Decrease initially and then increase	Eventually decrease to zero
130.	The rolling friction drag of an aircraft's wheels during take-off	Depends on the aircraft weight and is constant during take-off	Depends on the total load on the wheels and decreases during take-off	Depends on the wheel bearing friction and increases with speed	Depends on tyre distortion and increases with speed
131.	For a given wind speed, the regulations on wind factor give the least margin of safety on takeoff:	if the wind is at 45° to the runway	if the wind is at 90° to the runway	if the wind is a pure headwind	if the wind is a pure tailwind
132.	The take-off distance required will increase as a result of	increasing mass, reducing flap below the optimum setting,	decreasing mass, increasing flap above the optimum	decreasing mass, increasing flap above the optimum	increasing mass, reducing flap below the optimum

		increasing density	setting, increasing density	setting, decreasing density	setting, decreasing density
133.	If the flap angle is reduced below the optimum take-off setting, the (i) field limited take-off massand the (ii) climb gradient limited mass are : (i) (ii)	increase decrease	decrease increase	decrease decrease	increase increase
134.	If the flap setting for take off of a flight is maximum runway length required will be:	increased with increased tail wind	decreased with increased tail wind	decreased with increased head wind	decreased with increased cross win
135.	Which combination of forces on the aircraft determine the climb gradient	Lift, weight, thrust	Lift, drag, thrust	Thrust, drag, weight	Lift, weight, thrust, drag
136.	The effect of increased aircraft mass on the climb gradient is	decrease due to increased drag	increase due to increased lift required	decrease due to increased drag and reduced ratio of excess thrust to weight	increase due to increased speed required at optimum angle of attack
137.	The speeds V_X and V_Y are, respectively	Maximum achievable speed with max. continuous thrust and maximum take-off thrust	Speed for best rate of climb and speed for best angle of climb	Max. speed with flap extended and max. speed with gear extended	Speed for best angle of climb and speed for best rate of climb
138.	For a given aircraft mass, the climb gradient	increases if flap angle increases, and if temperature decreases.	decreases if flap angle increases, and if temperature decreases.	increases if flap angle increases, and if temperature increases.	decreases if flap angle increases, and if temperature increases.
139.	With a headwind, compared to still air conditions, the (i) rate of climb (ii) climb angle relative to the ground will : (i) (ii)	remain the same increase	increase increase	increase remain the same	remain the same remain the same.
140.	The rate of climb depends on	the excess thrust available	the excess power available	the excess lift available	the CLmax of the wing.
141.	The speed to give the maximum rate of climb will be	always the same as the speed for best angle of climb.	as close to the stalling speed as possible	higher than the speed for best angle of climb	lower than the speed for best angle of climb.
142.	With increasing altitude, the rate of climb	decreases because power available decreases and power required is constant.	increases because density and drag decrease.	decreases because power available decreases and power required increases.	decreases because power available is constant and power required increases.
143.	The maximum rate of descent will occur	at a speed close to the stalling speed with all permissible drag producing devices deployed.	at VMO with all permissible drag producing devices deployed.	at VMO with the aircraft in the clean configuration.	at a speed corresponding to maximum L :D with the aircraft in the clean configuration.
144.	In a power-off glide in still air, to obtain the maximum glide range, the aircraft should be flown:	at a speed corresponding to maximum L : D	at a speed close to the stall.	at a speed corresponding to minimum CD	at a speed close to VNE
145.	For a given aircraft mass the climb gradient is determined by	lift - weight	thrust - drag	lift - drag	thrust - weight.
146.	For a given aircraft mass, the climb	increase if the aircraft is	decrease if the aircraft is	increase if the aircraft is	decrease if the aircraft is

	tradient	accelerating and if the temperature increases.	accelerating and if the temperature increases	accelerating and if the temperature decreases	accelerating and if the temperature decreases.
147.	With the flaps in the take-off position, compared to the aircraft clean, the (i) climb gradient (ii) speed for best climb angle will : (i) (ii)	decrease increase	increase decrease	decrease decrease	increase increase
148.	The climb gradient will be reduced by	high mass, low temperature, high flap angle	high pressure altitude, turning flight, low temperature	high temperature, high pressure altitude, contaminated airframe.	low pressure altitude, high mass, high temperature.
149.	When an aircraft reaches its service ceiling	the excess power will be zero	it will have a small positive rate of climb	the rate of climb will be zero	the lift will be insufficient to support the weight.
150.	If the speed brakes are extended during the descent while maintaining a constant speedThe rate of (i) descent (ii) angle of descent will : (i) (ii)	increase remain the same	remain the same increase	increase decrease	increase increase
151.	In a power-off glide, an increase in aircraft mass will	increase the glide angle and increase the speed for minimum glide angle.	not affect the glide angle, but increase the speed for minimum glide angle.	increase the glide angle, but not affect the speed for minimum glide angle.	not affect the glide angle, and not affect the speed for minimum glide angle.
152.	For a jet aircraft, the speed to give the maximum rate of climb will be	the speed corresponding to maximum L :D	the speed corresponding to minimum L:D	a speed greater than that for maximum L :D	a speed less than that for maximum L :D
153.	In which document would you find information on known short-term unserviceability of VOR TACAN, and NDB?	NOTAM	Aeronautical Information Publication (AIP)	SIGMET	ATCC
154.	Where may details of temporary Danger and Restricted Airspace be found?	SIGMETs	Aeronautical Information Circulars (AIC)	NOTAM and Aeronautical Information Publication (AIP)	ATCC
155.	Details of temporary danger areas are published:	in AICs	on the appropriate chart	by VOLMET	in NOTAMs
156.	What are the types of NOTAM?	Temporary, short-notice, permanent	A, B, C	NOTAMN, NOTAMR, NOTAMC	A, E, L
157.	Where would you find information regarding temporary un-serviceability of any facility ?	AIP	NOTAM	AIC	ATCC
158.	Given: Dry Op Mass = 33510 kg Load = 7600 kg Final reserve fuel = 983 kg Alternate fuel = 1100 kg Contingency fuel = 102 kg The estimated landing mass at	42312 kg	42093 kg	42210 kg	42195 kg

	the alternate should be:				
159.	What is the purpose of Decision Point Procedure?	Carry minimum fuel to increase Traffic Load.	Increase safety of the flight.	Reduce landing mass to avoid stressing the aircraft.	Reduce contingency fuel to below that required from Decision Point to destination.
160.	What is Decision Point Procedure? It is a procedure to reduce the amount of fuel carried on a flight by:	Reducing contingency fuel from 10% to 5% of trip fuel.	Reducing contingency fuel to only that required from Decision Point to Destination.	Reducing trip fuel to only that required from Decision Aerodrome to Destination.	Reducing contingency fuel to below that required from Decision Point to destination.
161.	Turbo jet ac; taxi fuel 600 kg; fuel flow cruise 10,000 kg/hr; fuel flow hold 8,000 kg/hr; alternate fuel 10,200 kg; flight time 6 hours; visibility at destination 2000 mWhat is the minimum ramp fuel? (Considering contingency 5% of the trip)	80,500 kg	79,200 kg	77,800 kg	76,100 kg
162.	Given: DOM 33,510 kg; Traffic load 7,600 kgTrip fuel 2040 kgFinal reserve 983 kgAlternate fuel 1100 kgContingency 5% of trip fuelWhich of the following is correct?	est landing mass at destination 43,193 kg	est landing mass at destination 43,295 kg	est take-off mass 43,295 kg	est take-off mass 45,233 kg
163.	Multi-engined ac on IFR flightGiven: trip fuel 65 US Gal; contingency 5% trip; Alternate fuel including final reserve 17 US Gal; Useable fuel at departure 93 US GalAt a point halfway to destination, fuel consumed is 40 US GalAssuming fuel consumption is unchanged, which of the following is correct?	At departure Reserve Fuel was 28 US Gal.	At destination required reserves remain intact.	Remaining fuel is insufficient to reach destination with reserves intact.	At destination there will be 30 gal in tanks.
164.	For a flight of a jet engine aircraft of DOM 86000 kgs, MZFM 114000 Kgs, MLDM 124000 Kgs, MTOM 164000 Kgs, Trip fuel 30000 Kgs, Alternate fuel 3000 Kgs, Holding fuel 5000 Kgs/Hr overshoot 200 Kgs, Contingency 5% of the trip fuel Taxi fuel 200 Kgs,The maximum pay load that can be carried is :	26800 Kgs.	28000 Kgs.	30800 Kgs	32000 kgs.
165.	An aircraft is to fly 800nm from A to B at	153min; 435nm	163min; 435nm	163min; 455nm	173min; 435nm

	160kt groundspeed; the return groundspeed to its diversion A is 190ktIf its safe endurance is 5 hours calculate the time and distance from A to the point of no return				
166.	Determine the time and distance to the point of no return from the following data: i) Outbound leg; TAS 275kt, HEADWIND COMPONENT 35kt ii) Return leg; TAS 285kt, TAILWIND COMPONENT 35kt iii) Fuel available, excluding reserve, 21420 lbiv Mean fuel consumption 3730 lb/h	180 min; 788nm	197 min; 758nm	197 min; 788nm	210 min; 788nm
167.	On a flight from L to M the TAS is 170kt and the fuel in tanks is sufficient for the time of the flight, plus 2 hoursIn the event of the aircraft having to divert back to L the aircraft must arrive overhead with sufficient fuel for a further 75 minute flight Route details: FROM L to M wind component +30 Distance 800 NM; From M to L WC -30 DIST 800NM Calculate the time and distance from L to the point of no return	117.5min; 392nm	127.5min; 392nm	117.5min; 352nm	117.5min; 362nm
168.	On a flight from L to M the TAS is 170kt and the fuel in tanks is sufficient for the time of the flight, plus 2 hoursIn the event of the aircraft having to divert back to L the aircraft must arrive overhead with sufficient fuel for a further 75 minute flightRoute details: FROM TO WCDISTL M +30 800nm M L -30 800mn Calculate the time and distance from L to the point of no returnarrive overhead with a reserve of 260 Imp gal	981 nm	961 nm	951 nm	931 nm
169.	Given: Fuel flow out TO PNR 11500lb/hr TAS 474kt Wind component 50kt head Fuel flow HOME from PNR 10300lb/hr TAS	1769nm; 250.5min.	1530nm; 169min.	1510nm; 213.5min.	1530nm; 211.5min.

	466kt Wind component 70kt tail Flight Plan fuel 820001b Fuel less reserves 700001b The time and distance to the PNR are:				
170.	An aeroplane is to fly 1 190nm from A to B at a TAS of 210kt with a forecast wind component of 30kt head (assume 30kt tail on return to The mean fuel consumption outbound is expected to be 2400kg/h, and 2000kg/h if the aircraft has to return to AIf the fuel available is 14500kg, excluding reserve,the distance and time to the point of no return are	669m-n; 223min.	678nm; 226min.	687nm ; 229min.	665nm; 166min.
171.	At 1020Z an aircraft leaves its PNR to return to overhead its departure airfieldGiven: Fuel flow out TO PNR 3310kg/hr TAS 484kt Wind component 30kt head Fuel flow HOME from PNR 2810kg/hr TAS 475KT Wind component 50kt tail Route distance 2500nm Total Endurance fuel 28900kg Safe Endurance fuel 21000kg The aircraft's ETA at the departure airfield and planned fuel burn on the return flight are:	1328Z, 8990kg	1359Z; 12080kg.	1441Z; 12235kg.	1330Z; 8898kg.
172.	Reference CAP697 and relevant MEP dataGiven: Fuel in tanks 123GAL Safe Endurance Fuel 93.5GAL Departure OUT to PNR FL80 COAT-1°C Power Setting 55% @ 230ORPM Wind Component 20kt tail PNR HOME to Departure FL140 COAT-13°C Power Setting 65% @ 250ORPM Wind component 35kt head The distance and time to the PNR are:	348nm; 120.5min.	353nm; 122.5min.	459nm; 159min.	252nm; 87min.
173.	Reference CAP 697 and relevant SEP dataFuel in tanks 74GAL Safe Endurance Fuel 64.6GAL 251N HG/250ORPM Departure OUT to PNR FL 105 COAT -18°C Wind component 20kthead PNR HOME to	500nm; 208min.	391 nm; 182min.	436nm; 181.5min.	448nm; 187min.

	De Departure FL115 COAT -20°C Wind component 30kttail The distance and time to the PNR are:				
174.	For a flight distance to PNR	Decreases with the increase of headwind component	Decreases with the increase of tailwind component.	Is not affected by wind component	Both 'a' and 'b'
175.	For a flight distance to CP	Varies with Grand speed home	Varies with Grand speed out	both 'a' and 'b'	Is not affected with ground speed home or out.
176.	Distance to PNR is maximum if :	Tail wind component is maximum.	Head wind component is maximum	Head wind or tail component is nil	None of the above.
177.	On a flight of 1400nm the groundspeeds from the critical point to departure P and destination Q are 310 kt and 230ktCalculate the distance and time to the critical point between P and Q	. 804nm. 210min.	. 804nm. 190min.	. 825nm. 210min.	. 804nm. 220min. (804nm. 210min.)
178.	The distance C to D is 1120nm, TAS 210kt and wind component +35kt (assume the wind component is +35kt D to Calculate the distance and time from C to the critical point between C and D	633min, 2241nm	653min, 2241nm	653min, 2141nm	653min, 2341nm
179.	A flight at 165kt TAS is to make from L to N, 1620nmIf the track direction is 035°(T) and wind velocity is 090/35, after what period of time will it be quicker to continue the flight to N rather than return to L ?	912nmn, 366rnin.	932nmn, 386rnin.	912nmn, 386rnin.	892nmn, 386rnin. Ans: c (912nmn, 386rnin.)
180.	A flight is to be made from A to F; tracks and distance are: SECTOR DISTANCE(nm) A - B 220 B-C 170 C - D 480 D-E 95 E - F 320 Assuming that the mean TAS is 325kt, and the mean wind components from the critical point to F and A are +35kt and -25kt, calculate distance to the critical point between A and F	554nm	564nm	574nm	584nm
181.	A twin engine aircraft is to fly 1700nm from R to SAssume 2 engine TAS 480kt Single engine TAS 370kt Mean wind velocity 240/45 Track 030°(T) Airborne time 090OUTC After what time will it be	1008UTC	1015UTC	1018UTC	1028UTC

	quicker to continue the flight to S from the engine failure critical point?				
182.	A turbine - engined aircraft burns fuel at 200 gals per hour (gph) with a Fuel Density of 0.8What is the fuel flow if Fuel Density is 0.75?	213 gph	208 gph	200 gph	188 gph
183.	AC flying at 7500ft, is cleared to descend to be level at 1000ft, 6nm before reaching a beaconIf ground speed is 156kt and Rate of Descent is 800fpm, how many miles before the beacon should descent begin?	15	30.2	27.1	11.1
184.	After flying for 16 minutes at 100 kt TAS with a 20 kt tail wind, you have to return to the airfield of departureYou will arrive after:	10 min 40 sec	20 min	24 min	16 min
185.	At a fuel check you have 60 US gallons (USG) of useable fuel remainingAlternative fuel required is 12 USGThe flight time remaining is 1 hour 35 minsWhat is the highest consumption rate acceptable?	33.0 USG/Hr	37.9 USG/Hr	30.3 USG/Hr	21.3 USG/Hr
186.	ATC require a descent from FL270 to FL 160 to be level 6 nm before a VORIf rate of descent is 800 feet per minute, mean groundspeed is 256 kt, how far out from the VOR must descent be started?	59 nm	65 nm	144 nm	150 nm
187.	Given: Track 355 T, wind velocity 340/30kt, TAS 140kt, total distance A to B 350 nmWhat are the time and distance to the point of equal time between A and B?	75 mins, 211 nm.	75 mins, 140 nm.	50 mins, 140 nm.	114 rains, 211 nm.
188.	The fuel burn - off is 200 kg/hr with a relative fuel density of 0.8If the relative fuel density is 0.75, the fuel burn will be:	267 kg/hr	213 kg/hr	200 kg/hr	188 kg/hr
189.	Where would you find information regarding Customs and Health facilities?	ATCC broadcasts	NOTAMs	NAV/RAD supplements	AIPs
190.	Where would you find information regarding Search and Rescue procedures?	ATCC broadcasts	NOTAMs	SIGMETs	AIPs
191.	An aircraft climbs from an airfield,	6600 ft	7800 ft	6300 ft	6000 ft

	elevation 1500 ft, QNH 1023mb, to FL75What height does the aircraft have to climb? (Assume 1 mb = 30ft.)				
192.	Given by a met station elevation at 4000ft where QNH is 1003hpaThe minimum obstruction clearance altitude(MOC) is 8500ftAssume 30ft per HPaWhat is the minimum pressure altitude?	1280ft	8500ft	8200ft	8800ft
193.	Given: true track 215; mountain elevation 11,600 ft; local airfield gives QNH as 1035 mb; Required terrain clearance 1500 ft; temperature ISA - 15CWhich of the following is the minimum flight level considering the temperature?	FL150	FL 140	FL 120	FL110
194.	Multi-engined ac on IFR flightGiven: trip fuel 65 US Gal; contingency 5% trip; Alternate fuel including final reserve 17 US Gal; Useable fuel at departure 93 US GalAt a point halfway to destination, fuel consumed is 40 US GalAssuming fuel consumption is unchanged, which of the following is correct'?	At departure Reserve Fuel was 28 US Gal.	At destination required reserves remain intact.	Remaining fuel is insufficient to reach destination with reserves intact.	Remaining fuel is insufficient to reach the destination.
195.	Turbo jet a/c, flying to an isolated airfield, with no destination alternativeOn top of: taxi, trip and contingency fuel, what fuel is required?	Greater of 45 mins + 15% of trip or 2 hours	30 mins holding at 450m AMSL	30 mins holding at 450m AAL	2 hours at normal cruise consumption
196.	For a planned flight the calculated fuel is as follows: Flight time 2 hr 42 minThe reserve fuel, at any time, should be not less than 30% of trip fuel remainingBlock fuel 136 kgTaxi fuel 9 kgHow many kg of fuel should remain after 2 hours flight'?	33kg trip and 10 kg reserve	25 kg trip and 8 kg reserve	23 kg trip and 10 kg reserve	33 kg trip and no reserve
197.	Minimum planned take-off fuel is 160 kg (30% total reserve is include Assume the ground speed on this trip is constantWhen half the distance has been flow, the remaining fuel is 70 kgIs it necessary to divert to a nearby alternate?	diversion to a nearby alternate is necessary, because the remaining fuel is not sufficient.	diversion to a nearby alternate is not necessary, because the reserve fuel has not been used completely.	diversion to a nearby alternate is necessary, because it is allowed to calculate the fuel without the reserve	diversion to a nearby alternate is necessary, unless the captain decides to continue on his own responsibility.

198.	Refer to CAP 697 SEP1, fig 2.1Aerodrome elevation 2500 ft, OAT +l0CInitial weight 35001bClimb to FL140, OAT -5CWhat are the climb time, fuel and distance?	22 min, 6.5 g, 46 nm	24 min, 7.5g, 50 nm	2 min, 1.0g, 4 nm	26 min, 8.5g, 54 nm.
199.	Refer to CAP 697 SEP l, fig 2.1Given: FL75, OAT +5C, during climb, average headwind component 20kt, take-off from MSL with initial mass of 3 650 lbsFind time and fuel to climb.	11 min, 3.6 USG	7 min, 2.6 USG	9 min, 2.7 USG	9 min, 3.3 USG
200.	Refer to CAP 697 SEP I, fig 2.2.3Given: FL75, OAT +l 0 C, Lean mixture, 2300 RPMFind fuel flow (GPH) gallons per hour and TAS.	11.6 GPH 160 kt	68.5 GPH 160 kt	71.1 GPH 143 kt	11.6 GPH 143 kt
201.	Refer to CAP 697 SEP 1 fig 2.4 Given: Aeroplane mass at start up 3663 lbs fuel load (density 6lbs/gal) 74 gal Take-off altitude sea level Headwind 40 kt Cruise altitude 8000 ft Power setting full throttle 2300 RPM 20°C lean of peak Calculate the range	633 nm	844 nm	730 nm	547.5 nm
202.	Refer to CAP697 SEPGiven: - Power setting of 23 in HG at 2300 RPM 20°C leanFL50 OAT -5°c Fuel for start-up & taxi 10 lbs Allow 1 gallon & 3 minutes for your climb 10 minutes and no fuel correction for descent Flight time of 2 hours 37 minutes Reserve fuel of 30% of trip fuel What is the minimum block fuel?	250 lbs	208 Ibs	270 lbs	265 lbs
203.	Refer to CAP697, SEP 1, fig 2.5Given: FL75; Lean mixture; Full throttle/2300 RPM; Take-off fuel 444 lbs; Take-off from MSLFind endurance in hours.	5 hrs 12 mins	5 hrs 20 mins	4 hrs 42 mins	5 hrs 23 mins
204.	The still air distance in the climb is 189 Nautical Air Miles and time 30 minutesWhat ground distance would be covered in a 30 kt headwind?	189 nm	203 nm	174 nm	193 nm
205.	Given: Turbo jet aircraft taxi fuel 600kg; fuel flow cruise 10,000 kg/hr ; fuel flow	80,500 kg	79,200 kg	77,800 kg	76,100 kg

	hold 8,000kg/hr; alternate fuel 10,200kg; flight time 6 hours; visibility at destination 2000mWhat is the minimum ramp fuel?				
206.	What is Decision Point Procedures? It is a procedure to reduce the amount of fuel carried on a flight by:	Reducing contingency fuel from 10% to 5% of trip fuel.	Reducing contingency fuel to only that required from Decision Point to Destination	Reducing trip fuel to only that required from Decision Aerodrome to Destination.	Reducing trip distance
207.	What is the purpose of Decision Point Procedure?	Carry minimum fuel to increase Traffic Load.	Increase safety of the flight.	Reduce landing mass to avoid stressing the aircraft.	To assist in decision making at refueling
208.	Refer to CAP 697, ME PI, fig 3.3Given: Trip time 2 hr 37 min from departure to destination at 2500 RPM, 65% powerFor the climb and descent add 13 mins of cruise fuelReserve = 30% of trip fuelTaxy fuel is 5 US gal.What is the min Ramp Fuel?	86 gal	91 gal	120 gal	115 gal
209.	Refer to CAP697 MEPI fig 3.2A flight is to be made in a multi-engine piston aeroplaneGiven: Cruising level 11000 ft OAT in the cruise -15C Usable fuel 123 US gallons The power is set to economy cruiseFind the range in NM with 45 min reserve fuel at 45% power.	752 nm	852 nm	610 nm	602 nm.
210.	Refer to CAP 697 fig 4.5.1Given: aerodrome at MSL; cruise at FL280; ISA-10C; Brake release mass 57 500 kgWhat is the climb fuel required?	1100 kg	1150 kg	1138 kg	2200 kg
211.	Refer to CAP 697 fig 4.5.1Given: Track 340T; W/V 280/40kt; aerodrome elevation 387 ft; ISA -10C; Brake release mass 52 000 kg; cruise at FL280What are the climb fuel and time'?	15 min, 1100 kg	12 min, 1100 kg	10 min, 1000 kg	11 min, 1000 kg
212.	Refer to CAP 697 MRJTI fig 4.2.1, 4.2.2, 4.5.3.2Given: Brake release weight 45,000 kg, trip distance 120 nm, temperature ISA-10C, cruise at M.74Find optimum pressure altitude and TAS.	FL370 / 424 kt	FL250 / 435 kt	FL370 / 414 kt	FL250 / 445 kt
213.	DOM 2800kg Trip 300 Payload 400 MTOM 4200 MLM 3700 What is maximum fuel	700 kg	1000 kg	800 kg	500 kg

	load?				
214.	Given: Dry Op Mass 33510 kg Load 7600kg Final reserve fuel 983 kg Alternate fuel 1100 kg Contingency fuel 102 kgThe estimated landing mass at the alternate should be:	42312 kg	42093 kg	42210 kg	42195 kg
215.	Given: Dry operating mass 33 500 kg Load 7 600 kg Maximum allowable take-off mass 66 200 kg Standard taxi fuel 200 kg Tank capacity 16 100 kg The maximum possible take-off fuel is:	15 900kg	16 300kg	17 100kg	17 300kg
216.	Given : MTOM 64 400 kg MLM 56 200 kg MZFM 53 000 kg DOM 35 500 kg Load 14 500 kg Trip fuel 4 900 kg T/O fuel 7 400 kg Maximum additional load is ?	3 000 kg	4 000 kg	5 600 kg	7 000 kg
217.	Given : MTOM 64400 kg MLM 56200 kg MZFM 53300 kg DOM 35500 kg Traffic load 14500kg Trip fuel 4900kg Minimum takeoff fuel 7400kg What is the maximum allowable takeoff fuel ?	11400 kg	14400 kg	8600 kg	11100 kg
218.	Planning a flight from Paris (Charles-de-Gaulle) to London (Heathrow) for a twin jet aeroplanePreplanning: Maximum take-off mass 62 800 kg Maximum Zero Fuel Mass 51 250 kg Maximum Landing Mass 54 900 kg Maximum Taxi Mass 63 050 kg Assume the following preplanning results: Trip fuel 1 800 kg Alternate fuel 1 400 kg Holding fuel (final reserve) 1 225 kg Dry Operating Mass 34 000 kg Traffic Load 13 000 kg Catering 750 kg Baggage 3 500 kg Find the Take-off Mass	55 765 kg	51 425 kg	52 265 kg	51 515 kg
219.	Reference computer flight plre they able to account for bad weather in calculating fuel required?	can automatically allow extra consumption for anti-icing use	can automatically divert route around forecast thunderstorms	no	can automatically allow for poorly maintained engines
220.	Which statements are correct about computer flight plans? 1)They can file the	1 only	2 only	Neither	Both

	flight plan for you2)In the event of an in-flight re-routing computer automatically generates a new flight plan				
221.	A flight is planned from L to M, distance 850 nmWind component out is 35 kt (TW TAS 450 ktMean fuel flow out is 2500 kg/hr, mean fuel flow inbound is 1900 kg/hr and the fuel available is 6000 kgThe time and distance to point of safe return (PSR) is	1 hr 30 min, 660 nm	1 hr 30 min, 616 nm	1 hr 16 min, 606 nm	1 hr 16 min, 616 nm
222.	Given: Maximum useable fuel 15 000 kg, minimum reserve fuel 3 500 kg, Outbound TAS 425 kt, head wind component 30 kt, fuel flow 2150 kg/hrReturn TAS 430 kt, tailwind component 20 kt, fuel flow 2150 kg/hrFind the distance to the Point of Safe Return (PSR)	1491 nm	1125 nm	1143 nm	1463 nmb
223.	Given: total fuel, 15,000 kg reserve 1,500 kg, TAS 440 kt, wind component 45 head outbound, average fuel flow 2150 kg/hrWhat is the distance to the point of safe return?	1520 nm	1368 nm	1702 nm	1250 nm
224.	Given: fuel flow 2150 kg/hr, total fuel in tanks 15,000 kg, fuel reserve required on arrival 3500 kg, TAS outbound 420 kt, wind -30 kt, TAS home bound 430 kt, wind +20 ktFind the time to Point of Safe Return	2 hr 06 min	1 hr 26 min	3 hr 33 min	2 hr 52 min
225.	Given: Safe endurance 5 hours True track 315 W/V 100/20 TAS 115 kt What is distance to PSR?	205 nm	100 nm	282 nm	141 nm
226.	Given: Distance between airports 340 nm True track 320 W/V 160/40 TAS 110kts Distance to point of equal time (PET) is:	121 nm	219 nm	112 nm	228 nm
227.	Flying from A to B, 270 nm, true track 030, wind velocity 120/35, TAS 125 ktWhat are the distance and time to the Point of Equal Time?	141 nm, 65 min	141 nm, 68 min	135 nm, 68 min	150 nm, 65 min.

228.	Given: Course A to B 088(T) Distance 1250 nm Mean TAS 330kt Mean W/V A to B 340/ 60kt The time from A to the Point of Equal Time between A and B is:	1 Hour 54 minutes	1 Hour 44 minutes	1 hour 39 minutes	2 hours 02 minutes
229.	Given: Distance A to B 2050 nmMean groundspeed "on" 440 kt Mean groundspeed "back" 540 kt The distance to the point of equal time (PET) between A and B is:	1153 nm	1025 nm	920 nm	1130 nm
230.	If CAS is 190 kt, altitude 9000 ft, temperature ISA – l0C true course 350, W/V 320/40 distance from departure is 350 nm, endurance 3 hoursThe distance to Point of Equal Time (PET) is?	203 nm	170 rim	211 nm	330 nm
231.	An appropriate flight level for IFR flight in accordance with semi-circular height rules on a course of 180 degrees magnetic is:	FL105	FL90	FL95	FL 100
232.	For an IFR flight using ICAO semi-circular RVSM cruising levels on a magnetic track of 200, which is a suitable level?	FL290	FL310	FL320	FL330
233.	A "current flight plan" is:	flight plan in the course of which radio communication should be practised between aeroplane and ATC	filed flight plan	flight plan with the correct time of departure	filed flight plan with amendments and clearances include
234.	An aircraft in the cruise has a calibrated airspeed of 150 kt, a true airspeed of 180 kt and an average ground speed of 210 ktThe speed box of the flight plan must be filled as follows:	K0210	N0150	N0180	K0180
235.	For a flight plan filed before flight, the indicated time of departure is:	the time overhead the first reporting point after take-off	the time at which the flight plan is filed.	c, The estimated off-block time.	The time of take-off.
236.	For a radio equipped aircraft, the identifier in the ATS flight plan item 7 must always:	be the RTF call sign to be used	include the aircraft registration	include the operating agency designator	include an indication of the aircraft type
237.	For which flights are Flight Plans required? i)IFR flightsii)IFR and VFR flightsiii)Flights crossing national boundariesiv)Flights over waterv)Public transport flights	ii, iii, iv	i , iii , v	i , iii	ii , iii, iv, v

238.	Given: Maximum Certificated take-off mass 137 000 kg Actual take-off mass 135 000 kg For item 9 of the ATS flight plan the wake turbulence category is:	medium plus "M+"	heavy/medium "H/M"	medium "M"	Heavy "H"
239.	Given the following flight plan information, Trip fuel 136 kg Flight time 2.75 hrs Reserve fuel 30% of trip Fuel in tanks Minimum Taxi fuel 3 kg, state how "endurance" should be completed on the ICAO flight plan:	338	0334	245	249
240.	How many hours in advance of departure time should a flight plan be filed in the case of flights into areas subject to air traffic flow management (ATFM) ?	3.00 hrs	0.30 hrs	1.00 hr	0.10 hr
241.	If a pilot lands at an aerodrome other than the destination aerodrome specified in the ICAO flight plan, he/she must ensure that the ATS unit at the destination is informed within a specified time of her planned ETA at destinationThe time is:	45 mins	30 mins	15 mins	10 mins
242.	If equipment listed in item 19 is not carried:	Circle boxes of equipment not carried	Tick the boxes of equipment carried	Cross out the boxes for equipment not carried	List equipment carried in box 18 (other information)
243.	If the destination airport has no ICAO indicator, in box 16 of your ATS flight plan, you write:	////	AAAA	XXXX	ZZZZ
244.	In an ATS flight plan an aircraft will be classified as "L" if its MTOM is ?	27 000 kg	10 000 kg	57 000 kg	7 000 kg
245.	In an ATS flight plan item 15 where either a route for which standard departure (SId) and a standard arrival (STAR) are provided	SID should be entered but not STAR	Both should be entered	STAR should be entered but not SID	SID nor STAR should be entered
246.	In flight, it is possible to: iFile an IFR flight plan iiModify an active flight plan iiiCancel a VFR flight plan ivClose a VFR flight plan	i iii	b i ii iii iv	ii iii iv	i iv
247.	In the ATS flight plan Item 15, for a flight along a designated route, where the departure aerodrome is not on or connected to that route:	It is not necessary to indicate the point of joining that route as it will be obvious to the ATS unit.	It is necessary only to give the first reporting point on that route	The letters "DCT" should be entered, followed by the point of joining the ATS route.	The words "as cleared" should be entere

248.	In the ATS flight plan item 15, it is necessary to enter any point at which a change of cruising speed takes placeFor this purpose a "change of speed" is defined as:	10% TAS or 0.05 Mach or more	20 knots or 0.05 Mach or more.	5% TAS or 0.01 Mach or more	20km per hour or 0.1 Mach or more
249.	In the event that SELCAL is prescribed by an appropriate authority, in which section of the ATS flight plan will the SELCAL code be entered?	equipment	route	aircraft identification	other information
250.	Prior to an IFR flight, when filling in the ICAO flight plan, the time information which should be entered in box 16 "total elapsed time" is the time elapsed from	take-off until reaching the IAF (initial approach fix) of the destination aerodrome	taxi out prior to take-off until the IAF	take off until landing	taxi-out prior to take-off until completion off taxi-ing after landing.
251.	Reference item 19 of the ICAO flight plan, Endurance is?	Maximum flight time plus 45 minutes holding fuel	Maximum flight time plus 30 minutes holding fuel	Fuel endurance of the aircraft	Total usable fuel required for the flight
252.	Reference the ICAO flight plan, in item 15 this speed refers to	Indicated airspeed	Equivalent airspeed	Initial cruising true airspeed	Calculated groundspeed
253.	Standard equipment in item 10a is considered to be:	VHF, RTF, ADF, VOR, ILS	HF, RTF, VOR, DME	VHF, VOR, ADF	VHF, RTF, ILS, VOR
254.	The navigation plan reads: Trip fuel 100 kg Flight time 1 hr 35 min Taxi fuel 3 kg Block fuel 181 kg How should "endurance" be shown on the flight plan?	204	240	0249	252
255.	The planned departure time from the parking area is 1815 UTCThe estimated take-off time is 1825 UTCThe IFR flight plan must be filed with ATC at the latest at:	1725 UTC	1715 UTC	1745 UTC	1755 UTC
256.	Total Elapsed Time for an IFR flight, when filling in the ICAO flight plan at box 16, is the time elapsed from	take-off until landing	take-off until reaching the IAF (Initial Approach Fix) of the destination aerodrome	taxi-out prior to take-off until taxiing after landing	taxiing until the IAF (Initial Approach Fix) of the destination aerodrome.
257.	What is Total Elapsed Time on a VFR flight plan ?	From take-off to overhead destination	From take-off to overhead destination + 15 mins	From take-off to landing	From taxi to arrival on the gate. 225. When filling in a flight plan, wake turbulence category is a function of ? a) Max certificated landing mass. b) Max certificated take-off mass From taxi to

					arrival on the gate.
258.	When filling in a flight plan, wake turbulence category is a function of ?	Max certificated landing mass.	Max certificated take-off mass	Estimated landing mass	Estimated take-off mass
259.	When filling in item 9 of the flight plan and there is no aircraft designator listed, what should the entry be?	none	ZZZZ followed by an entry at item 18	XXXX followed by an entry at item 18	a descriptive abbreviation of the aircraft type.
260.	When submitting a flight plan before flight, departure time is ?	Overhead the first reporting point	At which the aircraft leaves the parking area	Take-off d. At which flight plan is filed	From taxi to arrival on the gate.
261.	You have filed a flight plan for an uncontrolled flight and suffer a delay prior to departureAfter how long a delay must you restate your off block time (OBT)?	30 mins	40 mins	60 mins	90 mins
262.	An ATC flight plan should be filed..........before departure of the flight	30 mins	45 mins	1 hrs	2 hrs
263.	You have a flight to DUBAI (DXB) via KARACHI (KHI) today you want to operate direct to DXB without landing at KHI but with the fuel you can uplift you can operate the flight upto KHI taking DXB as alternateIf you want to operate that flight to DXB with KHI as alternate fuel wise it is not possibleHow you can operate the flight?	Will operate to DXB without alternate fuel	Initially will depart for KHI with DXB as alternate and from over head KHI direct to DX	Both of the above	None of the above
264.	During a flight ETA to next reporting point shall be revised if it differ by :	5 minutes or more	4 minutes or more	3 minutes or more	need not to be revise
265.	During departure of a flight maximum i) structural limited TOM is 259000 kgs ii) RWY length limited TOM is 258000 kgs iii) OAT limited TOM is 255000 kgs iv) Obstacle clearance TOM is 256000 kgsThe regulated TOM is:	258000 kgs	255000 kgs	259000 kgs	256000 kgs
266.	During departure of a flight i) Maximum regulated TOM is 164000 kgs, ii) Maximum landing mass is 124000 kgs, iii) Maximum ZFM 114000 kgs, iv) Pay load 30000 kgs, v) Trip fuel 32000 kgs, vi) Alternate Holding and overshoot fuel 12000 kgsThe Maximum TOM is:	156000 kgs	164000 kgs	168000 kgs	144000 kgs

267.	Information on Search and Rescue (SAR) procedures may be obtained:	from NOTAMs.	from the latest AIC.	from the Aeronautical Information Publication.	by RT communication with the FIR within which the aircraft is operating. 1
268.	Refer to CAP697 SEP Figure 2.1Given : Airfield elevation 6000ft OAT 15°C Initial Weight 3525lb Cruise altitude 14000ft OAT -13 °C Wind component 60kt tail The time, fuel and ground nautical miles to TOC are:	16 min 5 gall 31 nm	15 min 6 gall 18 nm	17 min 7 gall 46 nm	16 min 5 gall 52 nm
269.	Refer to CAP697 SEP Figure 2.2Given: Pressure Altitude 10000ft OAT -15°C Power 23IN HG at 2300RPM The fuel flow and KIAS are:	67.3 PPH 140 kt	67.3 GPH 157 kt	11.4 GPH 139 kt	66.2 GPH 137 kt
270.	Refer to CAP697 MEP Figure 3.4An aircraft is flying at a High Speed Cruise at a pressure altitude of 12000ft, temperature ISA +15°C The TAS is:	189 kt	186 kt	183 kt	182 kt
271.	Refer to CAP697 MEP Figure 3.5 The endurance With 45 MinReserve at 45% Power for an Economy Cruise at 13000ft is:	4 hr 25 min	4 hr 04 min	4 hr 57 min	6 hr 18 min
272.	The air distance and time to climb is 197 nm and 33 min respectivelyWhat is the required ground distance with a 40 kt headwind component ?	222 nm	184 nm	157 nm	175 nm
273.	Given: Trip time 3hr 06min Block fuel 118kg Taxi fuel 8kg If the aircraft is required at any time during its flight to have a minimum reserve fuel of 30% of trip fuel remaining, the minimum fuel amount after 2hr is:	39 kg	55 kg	42 kg	45 kg
274.	An aircraft is airborne from an airfield, elevation 1560ft amsl, on a QNH of 986mb/hPaOn its track of 269°(M) there is a mountain 12090ft amslTo clear this obstacle by a minimum of 2000ft its correct ICAO VFR Flight level is: (1 mb/hPa = 30ft)	FL145	FL155	FL160	FL165

275.	On a Jeppesen chart the figures FL80 2700a are displayed below an airway What does the "FL80" indicate?	The Route MORA (a Safety Altitude)	Minimum Enroute Altitude	Maximum Authorized Altitude	The base of the airway
276.	In the Jeppesen SID, STARs & IAP directions are given as	True Course/Track	Magnetic Course/Track	True Heading	Magnetic Heading
277.	Refer to CAP697 SIMPLIFIED FLIGHT PLANNING LRC (use Figures 4.5.3.1 & 4.3.1 Given: Distance 997 nm tail wind component 160 kt, landing weight 45000 kg, Cruise weight 56000 kg, FL370, ISA 0°C The fuel required and trip time is:	11200 kg 4 hr 09 min	5300 kg 1 hr 09 min	4200 kg 1 hr 51 min	5000 kg 2 hr 00 min
278.	Refer to CAP697 MRJT Figure 4.4 Given: Aircraft mass 43000 kg Destination airfield elevation 3500 ft Alternate airfield elevation 10 ft ISA conditions What is the final reserve?	2110 kg	1025 kg	1038 kg	1055 kg
279.	Given: MTOM 62000 kg MLM 54000 kg DOM 35500 kg MZFM 51300 kg Take Off Fuel 14500 kg Landing Fuel 3500 kg The maximum traffic load for this flight is	15000 kg	15800 kg	12000 kg	4000 kg
280.	Given: Track 185°(T) Variation 9° east Heading 182°(M) Which is the lowest suitable ICAO IFR cruising level ?	FL280	FL310	FL290	FL270
281.	A normal commercial IFR flight has an estimated Estimated off Block time (EOBT) of 1540 UTC with the estimated take-off time as 1555 UTCWhat is the latest time for filing the ICAO Flight Plan?	1510 UTC	1455 UTC	1525 UTC	1440 UTC
282.	Given: A to B Distance 2050 nm Safe Endurance 6 hrs GS OUT 480 kt GS HOME 380 kt Calculate the distance and time to the Point of Equal Time from A	1272 nm 2 hr 39 min	906 nm 1 hr 53 min	1111 nm 2 hr 19 min	939 nm 1 hr 57 min
283.	Given: GS OUT 178 GS HOME 249 Distance A to B 450 nm Endurance 3 hours What is the distance to the Point of Safe Return from A ?	204 nm	311 nm	415 nm	262 nm
284.	You plan to fly from A to B at a TAS of 230 kt, a GS of 255 kt and an initial cruising	K0230 F150	N0230 F150	N0255 S1500	0230 FL 150

	pressure altitude of 15000 ftWhat should you complete Item 15 of the ICAO Flight Plan?				
285.	You are cruising at FL250 and need to be at FL50 10 nm before a VOR/DME Your rate of descent is 1250 ft/min and your GS in the descent 250 ktHow far before the VOR/DME should you start your descent ?	66.7 nm	83.3 nm	98.5 nm	76.7 nm
286.	You required to uplift 40 US Gallons of AVGAS with Sp.G of 0.72 How many litres and kilograms is this ?	109 ltr 151 kg	182 ltr 131 kg	182 ltr 289 kg	151 ltr 109 kg
287.	Given: DOM 33510 kg Traffic load 7600 kg Taxi fuel 250 kg Trip Fuel 2500 kg Contingency fuel 125 kg Final reserve fuel 983 kg Alternate fuel 1100 kg What is the estimated landing mass at the destination?	43318 kg	45818 kg	42218 kg	43193 kg
288.	When completing an IFR flight plan the Total Elapsed Time in item 16 is from	take-off to overhead the destination airport	from first taxiing under own power until the IAF for destination airport	take off to the IAF for the destination airport	take-off until landing at the destination airport
289.	An aircraft is carrying Maritime Survival EquipmentThe correct entry at Item 19 is:	Cross out indicators P, D and J; tick M.	Circle indicator M.	Tick indicator M.	Cross out indicators P, D and J.
290.	At a fuel Relative Density of 0.80 an aircraft turbine engine burns 220 liters per hourIf Relative Density is 0.75 what is the fuel burn ?	235 ltr/hr	206 ltr/hr	220 ltr/hr	176 ltr/hr
291.	Distance to CP varies with:	Ground speed home	Ground speed out	None of 'a' and 'b'	always of the mid point
292.	Following the fuel policy for a flight with isolated destination (Island theory) the fuel require for a flight is:	Trip + alternate + 45 minus	Trip + 2 hrs	Trip + Alternate + 30 mins holding + 1 overshoot	As per company policy
293.	In ATC Flight plan, section 10.a) 'S' stands for	VOR, VHF RTF, ADF, ILS	VOR, VHF, RTF, ILS	VOR, ADF	VHF RTF, ADF, ILS
294.	In ATC Flight Plan, Section 10.b) includes:	Secondary Surveillance Radar Transponder Category	Standard equipments	Survival equipments	None of 'a', 'b' & 'c'
295.	Indicator included in 10. a) of ATC Flight Plan is to be identified in:	Item 11	Item 16	Item 18	Item 20

CPL Composite (Human Performance)

SL	question	option_1	option_2	option_3	option_4
1.	How is oxygen transported around the body ?	By red blood cells combined with carbon dioxide	By red blood cells combined with nitrogen and water vapour	By red blood cells combined with haemoglobin	By red blood cells combined with nitrogen, hormones and plasma
2.	What is the function of the left and right ventricle ?	Left : Pumps deoxygenated blood to the lungs Right : Pumps oxygenated blood around the body	Left : Pumps oxygenated blood around the body Right : Pumps deoxygenated blood to the lungs	Left : Pumps oxygenated blood to the lungs Right : Pumps deoxygenated blood around the body	Left : Pumps oxygenated blood to the lungs Right : Pumps oxygenated blood around the body
3.	List in ascending order the factors that will increase the risk of coronary heart disease	Diabetes, raised blood cholesterol, smoking, previous history of cardio vascular problems, age, family history, obesity, raised blood pressure.	Diabetes, lack of exercise, raised blood cholesterol, smoking, raised blood pressure, previous history of cardio vascular problems, age, family history.	Diabetes, obesity, lack of exercise, raised blood cholesterol, smoking, raised blood pressure, previous history of cardio vascular problems, age, family history.	Raised blood pressure obesity,.family history, age, diabetes, raised blood cholesterol, smoking, previous history of cardio vascular problems.
4.	List the symptoms of carbon monoxide poisoning	Ruddy complexion, headache, stomach cramps, nausea, feeling lethargic.	Difficulty in breathing, ruddy complexion, headache, stomach cramps, nausea, feeling lethargic.	Ruddy complexion, headache, nausea, giddiness, stomach cramps.	Ruddy complexion, headache, tightness across the forehead, impaired judgement.
5.	The effects of smoking, particularly in relation to aviation are:	An early onset of hypoxia due to an apparent increase in altitude and a reduction in night vision	An early onset of hypoxia due to an apparent increase in altitude.	An early onset of hypoxia to an apparent increase in altitude up to a maximum of 40,000 ft.	An early onset of hypoxia due to an apparent increase in altitude with a resulting risk of anaemia
6.	Will smokers experience hypoxia lower or higher cabin altitude than non-smokers ?	At a higher cabin altitude	At a lower cabin altitude	Both will experience hypoxia at the approximately the same cabin altitude	Smoking, although harmful in other ways, lessens the effects of hypoxia.
7.	Where does the exchange of oxygen and carbon dioxide + water vapour take place	The arteries	The veins	The capillaries	The pulmonary veins and arteries
8.	The normal range of blood pressure for young adults	Systolic 120 mm Hg and Diastolic 80 mm HG	Systolic 80 mm Hg and Diastolic 120 mm HG	Systolic 120 mm Hg and Diastolic 120 mm HG	Systolic 80 mm Hg and Diastolic 80 mm HG
9.	Do pressoreceptors affect the	ECG readings	Tightening and relaxation of the blood vessels only	EEG readings	Tightening and relaxation of the blood vessels and the pulse rate
10.	Treatment of carbon monoxide poisoning	Immediate descent to MSA	Turn up cabin heat	Keep the patient's body	Stop all smoking

	where smoking is allowed in flights			temperature as low as possible	
11.	Low blood pressure can lead to	Low body temperature	Reduced tolerance to G forces	Infract	Angina
12.	Cardiac output (the quantity of blood pumped by the heart in unit time), is the product of	Stroke volume and the heart rate (pulse rate)	Stroke volume and viscosity of the blood	Pulse rate and strength of the ventricle muscle	Pulse rate only
13.	Internal Respiration is	The brain's control of the pulse rate	The exchange of oxygen with carbon dioxide and water in the cells	Sighing	The retention of breath
14.	What are the constituents of the atmosphere ?	Oxygen 22% Nitrogen 77% Other gases 1	Oxygen 22% Nitrogen 78% Other gases 2%	Oxygen 21 % Nitrogen 78% Other gases 1	Oxygen 22% Nitrogen 77% Other gases 1
15.	What is the % of oxygen and carbon dioxide in the alveoli at sea level ?	15.5% and 6.6% respectively	16.5% and 7.6% respectively	14.0% and 5.3% respectively	21.0% and 0.5% respectively
16.	At what height is the partial pressure of oxygen in the lungs approximately half that at sea level ?	10,000 feet	25,000 feet	30,000 feet	18,000 feet
17.	What is the percentage of oxygen in the atmosphere at 35 ,000 feet ?	0.25	0.21	0.32	Approximately 30%
18.	Why does cold make you more susceptible to Hypoxia ?	Heart beats faster which uses up more oxygen	More energy is required when shivering therefore more oxygen used	Lowers temperature of the body which makes it less efficient	Lowers temperature of the body and especially the head which has a debilitating effect on the brain
19.	The carbon dioxide level of the blood level is higher than normal. Does the brain	Increase the rate of breathing and pulse rate	Decrease the rate of breathing and pulse rate	Increase the pulse rate and decrease rate of breathing	Decrease the pulse rate and increase rate of breathing
20.	What are the times of useful consciousness at 20,000 ft. (moderate activity)	5 minutes	1 minute	10 minutes	30 seconds
21.	What increases the risk of DCS occurring in flight ?	Scuba diving shortly before flight	Snorkle diving shortly before flight	Alcohol	Smoking
22.	What are the restrictions to flying after scuba diving ?	No flying within 48 hours if a depth of 40 feet has been exceeded, otherwise the limit is 12 hours.	No flying within 48 hours if a depth of 30 feet has been exceeded, otherwise the limit is 24 hours.	No flying within 12 hours if a depth of 30 feet has been reached, otherwise the limit is 24 hours.	No flying within 24 hours if a depth of 30 feet has been exceeded, otherwise the limit is 12 hours.
23.	Tidal volume is	The volume of air inhaled with each normal breath	The volume of air exhaled with each normal breath	The volume of air breathed when diving	The volume of air inhaled and exhaled with each normal breath

No.	Question	A	B	C	D
24.	Henry's Law has application in Human Performance to	Otic Baratrauma	DCS	Carbon Monoxide poisoning	Partial pressure in the alveloi
25.	In the event of decompression the aircraft must	Descend to MSL	Descend to 10,000 ft.	Land as soon as possible	Descend to below 10,000 ft.
26.	The "chokes" are associated with	NIHL	DCS	Blockage of the alveoli	Oxygen loss
27.	The outer, middle and inner ear are filled with	Air Air Liquid	Air Liquid Liquid	Liquid Air Air	Liquid Liquid Air
28.	What is the purpose of the Eustachian tube ?	To pass sound waves across the middle ear to the Auditory nerve	To allow ambient pressure to equalise on both sides of the ear drum	To allow ambient pressure to equalise on the middle ear side of the ear drum	To allow ambient pressure to equalise on both sides of the Vestibular apparatus
29.	What causes conductive deafness ?	Damage to the outer ear	Damage to the pinna	Damage to the ossicles or the eardrum	Damage to the middle ear
30.	What is noise induced hearing loss (NIHL) ?	Loss of hearing due to damage to the ossicles	Loss of hearing due to damage to the Vestibular apparatus	Loss of hearing due to damage to the middle ear	Loss of hearing due to damage to the cochlea
31.	What is the most important sense for spatial orientation ?	Hearing and balance	Sight	"Seat of the pants"	All senses play their part in situation awareness
32.	If an aircraft accelerates, what do the otoliths indicate to the brain ?	That the aircraft nose is pitching down; this feeling will be re-enforced by an air driven artificial horizon	That the aircraft is turning; this feeling will be re-enforced by an air driven artificial horizon	That the aircraft is climbing and turning; this feeling will be re-enforced by an air driven artificial horizon	That the aircraft is pitching up; this feeling will be re-enforced by an air driven artificial horizon
33.	When can a pilot experience the "leans"	In all flight conditions	In the climb	In the descent	In the climb or the descent
34.	What should a pilot rely on if disorientated in IMC?	Vision	Turning head to recover from disorientation	Sense of balance	Instruments
35.	The frequency band that a healthy young person can hear is	70 - 15,000 cycles per second	80 - 20,000 cycles per second	500 - 15,000 cycles per second	20 - 20,000 cycles per second
36.	Decibels increase	Linearly	In terms of a logarithm	In terms of increments	In terms of integrals
37.	Presbycusis is an impairment of hearing due to	Damage to the cochlea	Damage to the semi-circular canals	Age	Smoking
38.	The Vegetative System is another name for the	Central Nervous System (CNS)	Noise Induced Loss of Hearing (NILH)	Sense Receptors	Autonomic Nervous System (ANS)
39.	The otoliths detect and acceleration greater than	0.001 m/s z	0.01 m/s z	0.1 m/s 2	1.0 m/s z
40.	What part of the eye bends the most light ?	The cornea	The lens	The pupil	The retina
41.	Which part of the eye has the best visual acuity?	The retina	The fovea	The lens	The cornea

42.	The resolving power of the fovea decreases rapidly ....from its centre	5 °	130 to 16 °	3 °	2 ° to 3 °
43.	What causes long or short sightedness?	Presbyopia	Astigmatism	Distortion of the eyeball	Distortion of the cornea
44.	What part of the spectrum should sunglasses filter out ?	The red and UV end of the spectrum	The blue and UV end of the spectrum	All high intensity light	UV only
45.	What four factors effect night vision ?	Age, alcohol, altitude and smoking	Age, altitude, Instrument lights and smoking	Instrument lights, alcohol, altitude and smoking	Age, alcohol, altitude and instrument lights
46.	Cones detect ....and are mostly concentrated on	Black and white fovea	Colour fovea	Black and white retina	Colour entry point
47.	Where is the "Blind Spot" ?	On the iris	On the fovea	On the edge of the lens	At the entrance to the optic nerve
48.	Peripheral vision is looked after by the	Rods	Cones	Rods and cones	Fovea
49.	Does lack of oxygen affect sight ?	Yes	No	Sometimes	It depends on the health of the individual
50.	The amount of light allowed to enter the eye is controlled by the	Cornea	Retina	Iris	Fovea
51.	Accommodation is controlled by the	Ciliary muscles	Iris	Lens	Cornea
52.	The maximum number of rods are found .... from the fovea	10°	20°	150	30°
53.	Astigmatism is normally associated with the	Retina	Fovea	Iris	Cornea
54.	Glaucoma is caused by	An increase in the pressure of the eye	A decrease in the pressure of the eye	A defect of the cornea	A defect of the retina
55.	Using the BMI formula, when will pilots be considered overweight ?	When they score over 30 for males and 29 for females	When they score over 26 for males and 22 for females	When they score 30 for males and 29 for females	When they score over 25 for males and 24 for females
56.	What is the weekly level of alcohol consumption that will cause physical damage ?	Consuming 22 units for men and 14 units for women	Consuming 21 units for men and 15 units for women	Consuming 24 units for men and 14 units for women	Consuming 21 units for men and 14 units for women
57.	At what rate does the body remove alcohol from the system ?	Approximately 1.5 units an hour	Approximately 2 units an hour	Approximately 2.5 units an hour	Approximately 1 unit an hour
58.	What is the absolute minimum time a pilot should stop drinking before flying ?	6 hours but it depends upon the amount of alcohol that has been consumed	24 hours but it depends upon the amount of alcohol that has been consumed	12 hours but it depends upon the amount of alcohol that has been consumed	8 hours but it depends upon the amount of alcohol that has been consumed
59.	Which of the following diseases is one of the world's biggest killer ?	Typhoid	Malaria	Yellow Fever	Influenza
60.	What causes otic barotrauma and when is	Blockage in the Eustachian	Blockage in the Eustachian	Blockage in the Eustachian	Blockage in the Eustachian

	it likely to occur ?	tube which is most likely to occur in the descent	tube which is most likely to occur in the climb	tube and around the eardrum which is most likely to occur in the descent	tube and around the eardrum which is most likely to occur in the climb
61.	The human body can tolerate a maximum of short duration g force ....in the ....axis	25G vertical	45G vertical	25G fore/aft	-3G fore/aft
62.	The two types of radiation are	Galactic and Sun Spots	Galactic and Solar	High frequency and Low Frequency	Solar Flares and Galactic
63.	To remove mercury spillage ....must not be used	Water	White spirits	Acid	Compressed air
64.	The best method for losing weight is	The use of appetite suppressants	Plenty of exercise	Crash diets	Exercise and diet
65.	Hypoglycemia can be caused by	Not eating regularly or fasting	Too much sugar in the blood	Excessive g forces	Stress
66.	How is performance effected by over and under arousal?	It is improved	There is little difference	It is degraded	It will depend on the individual
67.	What is the purpose of the "sympathetic" nervous system?	To control the emotional response under stressful conditions	To control the effects of adrenalin	To return the body after the "fight or flee" syndrome	To prepare the body to "fight or flight"
68.	What is the purpose of the "parasympathetic" nervous system ?	To prolong the bodies mobilisation and return the body to normal after the "fight or flight" syndrome.	To prepare the body to "fight or flee"	To direct the adrenalin to the correct organs of the body	To return the body to normal after an emotional response under stressful conditions
69.	What part of the body is effected with the vibration in the 4 to 10 Hz frequency range?	The brain plus there will be a headache	The chest plus there will be an abdominal pain	The respiration plus pains in the chest	The pulse rate
70.	Which shaped graph shows the relationship between arousal and stress ?	A U shaped graph	An inverted U shaped graph	A straight 45 'line	An M shaped graph
71.	Which stressor will cause the most stress ?	Home/work interface	Divorce	Death of a family member	Death of a spouse, partner or child
72.	Broadly speaking the GAS Syndrome consists of three categories of reactions. These are	Somatic, Psychosomatic, Physiological	Physiological, Psychosomantic, Psychological	Somatic, Physiological, Psychological	Somatic, Psychosomatic, Psychological
73.	Stress factors are	Non-cumulative	Cumulative	Stress reactions	Stress co-actions
74.	The Autonomic Nervous system comprises of	Sympathetic, Neo-sympathetic and Parasympathetic systems	Sympathetic and Parasympathetic systems	Neo-sympathetic and Parasympathetic systems	None of the above
75.	Define three methods of coping with stress	Action coping, Forced Coping,	Action coping, Cognitive	Slip coping, Cognitive	Slip Coping, Action Coping,

		Symptom Directed Coping	Coping, Symptom Directed coping	Coping, Symptom Directed coping	Symptom Directed coping
76.	Most successful weapons against high stress levels are	Planning, experience and self-control (fewer unexpected situation)	Learning, experience and Anticipation	Learning, experience and CRM	Planning, experience and CRM
77.	A comfortable humidity for most people in normal clothing is	40%-50%	30%-40%	20%-50%	40%-60%
78.	Where are visual and auditory stimuli initially stored ?	They are stored in the short term/working memory for a period of time	They are stored in the short term memory for a short time	They are stored in the Echoic and Iconic memory	They are stored in the Semantic and Episodic memory
79.	How long will the iconic memory store information ?	l - 2 seconds	2 - 3 seconds	0.5 - 1 second	7 seconds t2 seconds maximum
80.	How long will the Echoic memory store information ?	2 - 8 seconds	10 - 15 minutes	10 - 20 seconds	Normally up to 15 minutes
81.	Having created a mental model, what is the danger ?	To only seek information which supports it (Confirmation Bias)	Other clues outside do not tie up (Environmental Bias)	We need confirmation (Confirmation Bias)	We are easily swayed by outside influences (Environmental Bias)
82.	How many separate items can be held in the short term memory ?	8±2	9±2	7±2	6±2
83.	What is the main feature of a fully developed motor programme ?	Skilled based behaviour not easily explained to other people	Skilled based behaviour not requiring conscious thought	Skilled based behaviour slowly learned	Skilled based behaviour quickly learned
84.	What is the relationship between arousal and performance ?	Performance is increased at high levels of arousal	Performance is increased by both low and high arousal levels	Performance is degraded by both low and high arousal levels	Performance is increased at low levels of arousal
85.	What is qualitative overload ?	When there are too many responses to be made in the time available	When the amount of information is perceived to be beyond the attentional capacity and the task is too difficult	When too many responses are required	When responses get transposed due to overload of work
86.	What are the two types of attention ?	Cognitive and Intuitive	Intuitive and Behavioural	Divided and Intuitive	Selective and Divided
87.	Two of the factors effecting Long Term Memory are	Expectation and Suggestion	Repetition and Echoism	Amnesia and anxiety	Anxiety and concentration.
88.	Generally human error can be split into two categories	Faults and static errors	Static errors and faults	Dynamic and static errors	Faults and slips
89.	Information retention can be increased by the use of:	Study and Rote Learning	Instinct	Mnemonics and Memory Training	Tertiary Education

90.	An experienced pilot reacting to an engine failure is demonstrating?	Imitation learning	Operant conditioning learning	Skill learning	Insight learning
91.	Rule-based behaviour involves	Short term and long term memory	Short term and Iconic memory	Long term and Episodic memory	Short term, long term and Episodic memory
92.	With regards to procedures you are advised to	Memorise all procedures as carefully as possible	Memorise immediate actions and subsequent actions	Memorise immediate actions and refer to check list for subsequent actions	Rely on the checklist for all procedures
93.	Situation awareness is	The process that ensures the pilot maintains an accurate model of his/her environment	The process that ensures the pilot maintains an accurate model of the situation within the cockpit.	The process that ensures the pilot maintains an accurate model of the situation outside the cockpit	The process that ensures the pilot maintains an accurate model of the situation on and around the landing point
94.	What is the Jens Rasmussen's Model ?	"KRS"	SKR	"SRK"	"KSR"
95.	Among the most important factors which might interfere with Situational Awareness are	Weather patterns	Inter-personal differences	Hopes, wishes and desires	Poor instrument layouts
96.	The second lowest tier of Maslow's pyramid of needs is	Physiological needs	Safety and security needs	Belonging and affection needs	Self-esteem needs
97.	The two main tools in improving job satisfaction are	Job enrichment job enlargement	Job enrichment financial considerations	Financial considerations good industrial relations	Good management good industrial relations
98.	Job enlargement can be split into	Vertical slant	Slant horizontal	Slant vertical	Vertical horizontal
99.	A tendency to ask leading questions is a symptom of	Increased awareness	Decreased awareness	Increased situational awareness	Decreased situational awareness
100.	What is the likely effect of a runway which is wider than expected ?	Flaring too late and damaging the aircraft	Flaring too soon and causing a heavy landing	Approach speed much too high	Approach speed higher than usual
101.	What approach conditions cause "black hole effect"	Landing at night in sleet or heavy rain	Landing at night with a partially lit runway	Landing at night with the cockpit instruments turned up too high	Landing at night when there are no lights on the approach
102.	How does the "black hole effect" alter the pilots' judgement of the approach ?	Over-estimation of height	Under-estimation of height	Tends to make the approach much too fast	Tends to make the approach faster than normal
103.	If two aircraft are on a line of constant bearing, what is the likely outcome ?	Depends whether by day or by night	They will collide	There will be a near miss	It is quite safe and they will pass well clear of each other
104.	What is the duration of a saccade and rest period ?	0.3 seconds	0.5 seconds	0.013 seconds	1 second
105.	What visual technique should be used	Sweep from side to side with	Search the sky portion by	Pinpoint 10° segments of	Use a succession of small

	when searching for an aircraft ?	the eyes covering the whole field of vision	portion starting on the left	the sky and confirm before passing onto another	and rapid eye movements
106.	Refraction, due to rain on the windscreen, makes the approach	Steeper	Flatter	Faster	Slower
107.	What are the laws that the Gestalt Theory propose ?	The laws of Perception	The laws of Perceptual Illusions	The laws of Perceptual Reception	The laws of Perceptual Organisation
108.	A visual scan should cover the sky in overlapping sections of	5 °	10°	15°	20°
109.	How long is a free running circadian rhythm ?	24 hours	48 hours	25 hours	29 hours
110.	When is the circadian cycle of temperature at its lowest ?	At about 0500 hrs	At about 0 100 hrs	At about 0300 hrs	Varies from day to day
111.	What does the duration of sleep depend on ?	The mental and physical exercise taken prior to sleep	The number of hours awake prior to sleep	Timing i.e . when the body temperature is falling	The quality of the REM sleep
112.	When does orthodo(slow wave sleep) occur and what does it restore ?	It occurs early in the sleep cycle - stages 3 & 4 and it restores the body	It occurs early in the sleep cycle - stages 3 & 4 and it restores the brain	It occurs early in the sleep cycle - stages 1 & 2 and it restores the body	It occurs late in the sleep cycle - stages 3 & 4 and it restores the brain
113.	How many stages are there in a sleep cycle ?	3 stages plus REM	4 stages plus REM	3 stages including REM	4 stages including REM
114.	What will an EOG trace during REM sleep ?	Little activity	A lot of activity	Intermittent activity	No activity
115.	What is the function of REM sleep ?	To refresh the body after exercise	To refresh the body and brain following physical and mental activity	To assist in the organisation of memory and helping to co-ordinate and assimilate new information learned	To exercise the brain so it is prepared for the next day
116.	How long does it take for the circadian rhythm to re-synchronise to local time after crossing time zones ?	Approximately 2 days per 1 to 2 hours of time change	Approximately 1 day per 1 to 2 hours of time change	Approximately 2 days per 1 to ½ hours of time change	Approximately 1 day per 1 to ½ hours of time change
117.	When suffering from sleep deprivation, will performance be further decreased by altitude ?	No	Yes	Sometimes	Under certain circumstances
118.	The two forms of fatigue are	Mental and physical	Short-term and chronic	Mental and body	Psychological and physiological
119.	Insomnia is divided into	Psychological and physiological	Mental and physical	Clinical and situational	Clinical and physiological
120.	Can you fly suffering from narcolepsy ?	Under the strict supervision of an Aviation Medical Specialist	Sometimes - it depends on the degree	Never	By day only
121.	How would a person who is aggressive and changeable be described ?	Aggressive extravert	Unpredictable extravert	Unreliable extravert	Anxious extravert

122.	What are the personality traits of a good pilot?	Reliable and stable	Stable and extraverted	Reliable and extraverted	Reliable, calm and extraverted
123.	What "P" and "G" qualities should a pilot have ?	G+P+	G++ P++	G++P+	P+P+
124.	Is a group decision likely to be more or less risky than one made by the individual members ?	Less risky	Sometimes more risky	Sometimes less risky	More risky
125.	What should a Captain do before making a non-urgent decision ?	Put his own view forward and then ask for the opinions of other members of the crew	Consider all the implications	Encourage ideas from the crew before stating his own opinion	Monitor his motor programme (flying)
126.	Is a constituted crew an advantage in commercial aviation	Always	Sometimes	Depending on the task	None of the above
127.	What are the three types of Authority Gradients Cockpit	Autocratic, Subjective, Synergistic	Autocratic, Submissive, Synergistic	Laisser-Faire, Subjective, Synergistic	Autocratic, Laisser-Faire, Synergistic
128.	The Laisser-Faire cockpit may arise when	The Captain is suffering from stress	The Captain is pre-occupied	On a competent co-pilot's leg	On an incompetent co-pilot's leg
129.	To counter-act an authoritarian cockpit crews should	Ensure that they ensure that their opinions are heard in spite of possible confrontation	Remain silent and sort it all out on the ground	Co-operate in a conciliatory form but the contents of this co-operation is firm	Obtain support from another crew member
130.	CFIT means	Controlled Flight in Terminal airspace	Controlled Flight into Terrain	Controlled Flying in Training	Controlled Flying in Taxiways (helicopters)
131.	Implicit questions are	Is another name for closed questions	Require deductions to be made before an answer is possible	Does not Require deductions to be made before an answer is possible	Require a quick answer
132.	Good Synergy is	1+1 = 2	l+1 = <2	1 + 1 = 4	1 + 1 =>2
133.	Co-ordination is divided into the three following types	Redundant Actions, Temporal and Co-action	Redundant Actions, General Co-operation and Co-action	General Co-operation, Temporal and Co-action	Cognitive Co-action, General Co-operation and Temporal
134.	Synchronization can be said to be divided into	Temporal Synchronization and Rational Synchronization.	Cognitive Synchronization, Temporal Synchronization, Rational Synchronization.	Cognitive Synchronization and Temporal Synchronization.	Cognitive Synchronization and Rational Synchronization.
135.	The contents of a Transmitter's message will depend on	The Receiver's image of the Transmitter	The Transmitter's image of the Receiver	The Transmitter's image of the situation	The Transmitter's image of the perceived situation
136.	Having interrupted your Captain for a sound reason you must	Attempt to establish eye contact with him/her	Remind him/her of his/her last action before the interruption	Make sure there is no ATC traffic on the radio	You must never interrupt
137.	A briefing should consist of less than	7 ideas	10 ideas	7 sentences	10 sentences

138.	Among the rules to improve crew co-operation are	Good briefings and awareness of cultural differences	Good briefings and a harmonious cockpit atmosphere	Use professional language	Resist putting your opinion forward first
139.	Communication in the cockpit is primarily used for what purpose ?	It is the main tool to ensure coordination	It is the main tool to ensure comprehension	It is the main tool to ensure harmony	It is the main tool to ensure understanding
140.	What is meant by the term "Synergy" ?	Synergy is the state where the individual performances exceeds the sum of the group performance	Synergy is the state where the group performance exceeds the sum of the individual performances	Synergy is the state where the group performance exceeds the sum of the individual performances by 50%	Synergy is the state where the individual performances exceeds the sum of the group performance by 5 0%
141.	In co-ordinated action what does the term "redundant actions" mean ?	The strict duplication of actions by various individuals	The strict duplication of actions by two individuals	Actions which are in the past	Actions which have been covered by the check list
142.	What is meant by "co-action" ?	Individuals working in the different environments but sharing the same general objectives and working independently in carrying out their actions	An action by the co-pilot	The strict duplication of actions by various individuals	Individuals working in the same environment and sharing the same general objectives but working independently in carrying out their actions
143.	In communications what is Hypertext ?	The set of implicit information contained in a written text or spoken message	A recommended layout for checklists	The set of implicit information contained in a spoken message	A recommended layout for checklists and emergency drills
144.	What is a dialogue ?	A conversation between two people	A series of communications on different subjects between a transmitter and receiver	A series of communications on the same subject between a transmitter and receiver	A communication between two or more people or machines
145.	What are the key points of a good briefing ?	Individual, understood and simple	Individual, clear and simple	Individual, understood and short	Simple, clear, understood and individual
146.	What is anthropometry ?	The study of Man's adaption to machines	A branch of anthropology	The study of human measurement	The study of the adaption of machines to Man's needs
147.	What is the purpose of the lumbar support ?	To allow the most comfortable position for the spine and higher neck bones	To allow the most comfortable position for the spine and shoulder bones	To allow the most comfortable position for the spine	To produce an even pressure of the discs by allowing the lower spine to curve naturally
148.	What are the essential characteristics of a cockpit warning ?	It should have the best attention-getting qualities as possible	It should be attention-getting but not alarming	It should have attention-getting qualities which do not compromise a clear indiction to the pilot of the	Must not dazzle or possibly compromise the crew's night vision

				faulty component/system	
149.	What is the most important feature of flight deck design ?	Escape and emergency exits should be clear of obstructions	The Design Eye Point must be clearly marked	Important controls must be located in easily reached and unobstructed positions	Control and indicators should be standardised
150.	What instrument is best for showing small change ?	A digital display	An analogue display	A mixed digital/analogue display	Ultra/high-precision gyro instrument
151.	What colour should the `Alert' warning be on a CRT ?	Bright red and flashing	Steady Red	Flashing yellow/amber	Steady yellow
152.	A manually operated valve should be opened by	Turning it clockwise	Turning it anti-clockwise	Turning either way	Depends on the system it operates
153.	In the Shell Model L stands for	Latent errors	Long-termed errors	Lengthy errors	Liveware
154.	System Tolerance can be sub-divided into	Protected and semi-protected systems	Protected and endangered systems	Protected and vulnerable systems	Protected and quasi-protected systems
155.	A flashing red warning light on a CRT normally indicates	There is a fault in a critical system	Emergency	Alert	Danger
156.	Automation Complacency is	Overconfidence in the handling capability of the pilot	Overconfidence in the handling capability of the pilot of computers	Over-reliance on automation	The blind belief in automation
157.	Mode error is associated with	Automation	Hardware	INS	Software
158.	What are the categories of risk ?	Objective/Sudden and Subjective/Gradual	Sudden/Impromptu and Gradual/Planned	External/Objective and Internal/Subjective	Impromptu/Objective and Planned/Subjective
159.	If a person will tend to overestimate the frequency of	A common but negative occurrence	A common but beneficial occurrence	A rare but beneficial occurrence	A are but negative occurrence
160.	People tend to be biased to make a	Risky loss rather than a certain loss even if the expected loss from the former is greater	Risky loss rather than a certain loss even if the expected loss from the former is less	Risky loss rather than a certain loss even if the expected loss from the latter is greater	Risky loss rather than a certain loss even if the expected loss from the latter is far greater
161.	Press-on-tis is a	Common dilemma faced by all pilots	Is only experienced by skilled pilots	Only happens to inexperienced pilots	Is rarely faced by good pilots
162.	Oxygen is transported in the blood:	dissolved in the blood plasma.	in chemical combination with haemoglobin in the white blood cells.	as microscopic bubbles linked to blood platelets.	in combination with haemoglobin in the red blood cells.
163.	Safety in commercial air transport:	is better than road safety, but not as good as rail safety.	though effective, lagging behind road and rail safety.	increasing each year, due to the increasing automation of modern aircraft.	better than road safety and rail safety.
164.	The General Adaptation Syndrome has in sequence the following phases:	alarm phase - denial phase - acceptance phase.	alarm phase - resistance phase - exhaustion phase.	stressor - resistance phase - adaptation phase.	resistance phase - exhaustion phase - recovery

					phase.
165.	The eye datum or design eye position in the cockpit is established:	so that the pilot can maintain an adequate view of all the important displays inside, and of the world outside with minimum head or body movements.	to enable the pilot to see all his flight instruments within minimum scan movements of the head.	at the centre of the artificial horizon or flight director indicator.	to determine the eventual size of the flight deck and where the window frames will be positioned so as to give minimum interference to the pilot's field of view.
166.	Which of the following is NOT one of the 5 hazardous attitudes?	Macho.	Anti-authority.	Impulsivity.	Domination.
167.	Following a flight that transits numerous time zones, the associated shifting of Zeitgebers helps resynchronization to the new local time at the average rate of:	2.5 hours per day.	1.5 hours per day.	4 hours per day.	1 hour per day if the flight has been westward and 2 hours per day if the flight has been eastward.
168.	A man is considered to be obese if his Body Mass Inde(BMI) is over:	18	25	22	30
169.	Divided attention:	is a fallacy, a pilot can only concentrate on one thing at a time.	makes it possible to detect abnormal values for flight parameters even though they are not the pilot's immediate concern.	makes it possible to increase the number of simultaneously managed tasks in safety.	makes it possible to carry out several cognitive processes at the same time.
170.	Barotrauma of the cranial sinuses is most likely to occur;	during the descent.	among elderly passengers.	In the climb.	In persons with a history of cardio-vascular problems.
171.	During visual scanning the eye movements should be:	large and frequent.	Small and infrequent.	Small and frequent.	Large and infrequent.
172.	During scanning of both the instruments and the exterior, the approximate duration of a saccade is:	0.1 seconds.	1/3 second.	1.0 second.	variable, depending on the angular difference between the two objects to be scanned.
173.	Rule based behaviours are stored in the brain:	as sets of rules in long term memory.	as `bits' in the working memory.	as conditioned responses in motor programmes.	as rule giving automatic linkage between the semantic and working memories.
174.	`Environment capture' is the process whereby:	the pilot becomes fixated on the outside environment and neglects to monitor the instruments in the cockpit.	the pilot keeps `head in cockpit' to an extreme degree and may therefore miss vital cues from the external environment.	the pilot is unable to allocate priorities between the exterior and interior environments causing confusion and the	the fact of being at a particular stage of flight may cause an automatic response to checks when the actions have not

				possibility of mistakes.	actually been completed.
175.	In respiration the functions of the nasal passages are to:	enable the detection of possible noxious gases and trigger the body's defences.	trap harmful particles and bacteria their mucous membranes so that they will not pass into the very dedicate lung tissue.	filter, warm and humidify air drawn in during inspiration.	sample the air to enable the respiratory mechanism to adjust the rate and depth of breathing.
176.	The common illusion created by linear acceleration or deceleration is:	a false banking sensation due to disturbance in the endolymph of the inner ear.	a combined pitch up and banking sensation.	a feeling of pitch up when the aircraft decelerates causing an automatic attempt to push the nose of the aircraft down.	a pitch up feeling when the aircraft accelerates.
177.	A system can be said to be tolerant of error when:	its safety system is too subject to error.	its safety system has taken into account all statistically probable errors.	the consequence of error will not seriously jeopardize safety.	latent errors do not entail serious consequences for safety.
178.	The physiological responses to high levels of stress are:	fear, anxiety, depression.	sweating, dryness of the mouth, breathing difficulties.	indecision, inattention, withdrawal.	temporary mental confusion, restlessness.
179.	The `fight or flight' response occurs when:	a normal non-aggressive person suffers stress as result of shock, turns pale, trembles and chooses to flee rather than fight.	in anger a person becomes red in the face, aggressive and chooses to fight rather than flee.	the sympathetic nervous system provides an individual with the resources to cope with a new and sudden source of stress.	the parasympathetic nervous system provides extra resources for an individual to cope with a new and sudden source of stress.
180.	If information in the working memory is not rehearsed it will be lost in:	1 to 2 minutes.	8 to 12 seconds.	5 to 10 minutes.	10 to 20 seconds.
181.	Anthropometry is:	the study of human behaviour in response to stress.	the study of sleep patterns and circadian rhythms.	the study of the relationship between man and his working environment	the study of human measurement.
182.	The generally accepted model for the acquisition of expertise or skill comprises three stages:	cognitive, associative and automatic.	cognitive, associative and expert.	associative, automatic and expert.	automatic, cognitive and expert.
183.	The speed of any learning process can be increased by:	gradually increasing the psychological pressure on the students.	punishing the learner for unsuccessful trials	reinforcing successful trials.	reinforcing errors made during the learning process.
184.	Decision making in emergency situations requires primarily:	speed of reaction.	the distribution of tasks and crew coordination.	strong situational awareness.	the whole crew to focus on the immediate problem.
185.	The red blood cells are produced in the	the bone marrow.	The spleen when triggered by	The liver and pancreas.	The liver and spleen.

	body by:		hormone secretion.		
186.	The part of the retina with the highest visual acuity is:	the optic nerve entry point.	the fovea.	the retinal optical focus point.	the rod/cone balance point.
187.	The capacity of the working memory may be expanded by:	constant repetition of the material.	`chunking' the material.	immediate transfer of the material to the long term memory.	practice of the use of mnemonics as memory aids.
188.	Discussing private matters in the cockpit:	decreases the captains role in leadership	should be avoided in flight.	Can improve team spirit	Is appropriate at any stage of the flight.
189.	Co-action is a mode of coordination that involves:	working in parallel to achieve individual objectives with independent and unrelated aims.	sustained cooperation on actions and the formulation of commitments concerning flight situations.	working in parallel to achieve one common objective, with independent but specified aims.	the application of procedural knowledge in the conduct of specific actions.
190.	A pilot suffering from decompression sickness should:	descend to a lower level where the symptoms will disappear and continue the flight at this or a lower level.	decrease the cabin pressure to relieve the symptoms.	continue the flight at a lower altitude and carry out exercises to relieve pain in the affected site.	land as soon as possible and seek medical assistance.
191.	The temperature range of a flight deck to be comfortable should be:	15°C to 30°C with a relative humidity of 40 - 60%	l 0°C to 25°C with a relative humidity of 20 - 30%	15°C to 30°C with a relative humidity of 70 - 80%	30°C to 40°C with a relative humidity of 30 - 40%
192.	The four primary flight instruments arranged in the standard `T' consists of:	ASI, AH/FDI, ALT, T'SLIP.	ASI, AH/FDI, DI/RMI, RMI.	ASI, AH/FDI, ALT, DI/HIS.	ASI, ALT, DI/HIS, RMI.
193.	The greatest source of incapacitation in flight is:	motion sickness.	heart attack or circulatory problems.	acute gastro-enteritis.	spatial disorientation.
194.	Raised blood pressure (hypertension) is the main risk factor in the development of:	strokes.	angina.	coronary infarcts.	ferric haemoglobin poisoning.
195.	A man is considered to be overweight if his Body Mass Inde(BMI) is over:	20	25	30	35
196.	Thinking on human reliability is changing. Which of the following statements is correct?	human errors are now considered as being inherent to the cognitive functions of humans and are generally inescapable.	human errors can be avoided. It will however extending one's knowledge and extreme vigilance.	the individual view of safety has gradually replaced the systemic view.	it is believed that it will be possible to eliminate all errors in the future.
197.	How would one interpret the following statement; `one cannot avoid communication'?	every situation requires communication.	One can not influence one's own communications.	Being silent or inactive are also non-verbal behaviour patterns that are meaningful.	Differences in language or culture may prevent any meaningful communication.
198.	Information in the short term memory:	is not affected by the arrival of new information.	is only retained for 2 to 3 minutes.	can be retained for long periods.	must be actively rehearsed to ensure long term

					retention.
199.	A function of the vestibular apparatus is to:	assist in maintaining spatial orientation.	control motion sickness.	maintain visual orientation.	enhance hearing ability, especially at high frequencies.
200.	If a pilot's seat is set too low on the approach, the effect would be to:	obscure the overshoot.	obscure the flight instruments.	obscure the undershoot.	all of the above.
201.	Which of the following graphs represents the relationship between arousal and performance?	Inverted "U"	U shaped	Straight line rising at 45° angle	Straight line descending at 45° angle
202.	A motor programme is:	one that is based on knowledge and experience.	the way that a checklist is actioned.	one that requires conscious thought throughout its action.	one that is learned by practice and repetition and which may be executed without conscious thought.
203.	The main factor in the focussing of the human eye is:	the cornea.	the lens.	the iris.	the internal fluid in the eyeball.
204.	Referring to the Body Mass Index, a man weighing 81 kg. Who is 175 cm tall would be:	considered to be within the normal weight range.	considered to be overweight.	considered to be obese.	considered to be underweight.
205.	Once an individual has made a decision regarding a situation, he is most likely to:	give too much weight to information that tends to confirm the original decision.	give equal weight to information that confirms or contradicts that decision.	give insufficient weight to information that confirms the original decision.	give too much weight to information that goes against the original decision
206.	Hypertension is:	a high level of stress.	low blood pressure.	a high workload.	high blood pressure.
207.	A pilot suffering disorientation should:	rely on the vestibular apparatus.	Rely on his somatosensory system (`seat of the pants').	Line up with a visual reference (e.g. horizon).	Re-erect the flight instruments.
208.	During a general briefing at the preflight stage the captain should emphasise.	the complete delegation of all duties.	the importance of crew coordination.	the priority of departing on schedule.	the avoidance of inadequate handling of controls.
209.	Gastro-enteritis would prevent an individual from flying as a crew member:	always.	possibly, if severe.	if not treated by an aviation specialist doctor.	never.
210.	An ideal leader would be:	goal directed and person directed.	goal directed only.	person directed only.	neither goal nor person directed, but moderate and accommodating.
211.	The severity of noise induced hearing loss (NIHL) is determined by:	the volume of noise experienced.	the duration of high noise levels experienced.	a break down in the conducting system of the ear.	the volume and duration of the noise experienced.
212.	Which of the following diseases causes the greatest number of deaths each year?	Bubonic plague.	Malaria.	AIDS.	Smallpox.

47

213.	The major contribution to our perception of orientation is:	the visual sense.	the vestibular apparatus.	our previous experience.	the somato-sensory system.
214.	Human behaviour is determined by which of the following?	Biological characteristics, social environment and cultural influences.	Biological characteristics.	The social environment.	Cultural influences and heredity.
215.	The term `attitudes' is used to describe:	the predisposition for acting in a particular manner.	a synonym for ability.	a synonym for behaviour.	the conditions necessary for carrying out an activity.
216.	Stress management is:	the effect on an individual in a managerial, or other responsible, position of the pressures of that job.	the stress upon an employee caused by the pressures imposed by the management or his superiors at work.	the process by which individuals adopt systems to assist in coping with stress.	the use of a process, such as relaxation techniques, to remove the stress source.
217.	Risky shift is:	the tendency for extroverts to take more risks than introverts.	the tendency for military pilots to take more risks than civilian pilots.	the tendency of a group to make a more risky decision than the average individual within the group.	the tendency for individuals to take more risky decisions when transferred to a different aircraft type.
218.	Very high ambition and a need for achievement:	meets the requirement for stress resistance.	disturbs the climate of cooperation.	always promotes effective teamwork.	makes it easier for an individual to cope with personal failures.
219.	Long or short sightedness is normally caused by:	distortion of the cornea.	the shape of the whole eyeball.	distortion of the lens.	a malfunction of the iris.
220.	`Environment capture' may lead to:	errors of rule based behaviour.	errors of knowledge based behaviour.	errors of semantic memory.	errors of skill based behaviour.
221.	A runway that slopes downwards when approaching may induce the pilot to:	land long into the runway.	make a shallow approach.	land short.	go around.
222.	The use of alcohol, drugs or tobacco to counter the effects of stress is an example of:	action coping	cognitive coping.	symptom directed coping.	bio-feedback technique.
223.	A cockpit warning of an emergency should:	startle to gain attention.	illuminate a flashing red light.	make a noise symptomatic of the problem	be attention getting without being startling.
224.	In processing information an attentional mechanism is required because:	working memory has a limited capacity.	processing capacity is limited.	echoic and iconic memories have a very short retention time.	it will activate a selection from episodic or semantic memory.
225.	The function of slow wave sleep is believed to be:	a period of rest to allow restoration of the body tissues.	a period to rest and refresh the mind.	a period when vivid dreams can take place.	help in the learning process especially if a new or difficult procedures have been learned during the day.

226.	Oxygen is carried in the blood:	in combination with haemoglobin in the white blood cells.	dissolved in the plasma.	as microscopic bubbles attached to blood platelets.	within the red blood cells.
227.	Anthropomorphic data table measurements should be taken from:	a large selection of the general population static and dynamic measurements.	a specific population using static measurements.	a large selection of the general population using static measurements.	a specific population using dynamic and static measurements.
228.	Sleep apnoea:	occurs more often in older individuals.	occurs when an individual cannot prevent falling asleep even when in sleep credit.	most often occur during REM sleep.	is a cessation of breathing whilst asleep.
229.	In standardised controls a handle used to open a valve should:	always rotate in an anti-clockwise direction.	only rotate anti-clockwise if placed on an overhead panel.	rotate clockwise if used from the left hand seat and anti-clockwise if used from the right hand seat.	always rotate clockwise.
230.	A pilot is permitted to use bi-focal contact lenses:	only during the cruise stage of the flight.	never when flying.	only when a pair of bi-focal spectacles are carried for emergency use.	only when flying in daylight hours in VNIC conditions.
231.	Donating blood by an operating flight deck crew member is:	permitted, subject to at least 24 hours elapsing before one's next flight.	not permitted for aircrew who are actively flying.	only permitted within 12 hours of one's next flight when cleared by a qualified aviation doctor.	allowable with no restrictions on subsequent flying.
232.	On the retina of the eye, the rod cells are:	used primarily during daylight.	highly sensitive to colour changes particularly those at the blue end of the spectrum.	sensitive to much lower light levels than the cone cells.	concentrated in the area of the fovea.
233.	Long sightedness is normally caused by:	the eyeball being shorter than normal.	the retina being too concave.	the eyeball being longer than normal.	the retina being too convex.
234.	The most obvious sign of an individual suffering from carbon monoxide poisoning is:	muscular impairment.	cyanosis of the lips and fingernails.	sensory loss, particularly tunneling of vision.	cherry red lips and flushed cheeks.
235.	When on a collision course with an aircraft on a reciprocal track, the apparent size of the approaching aircraft:	does not change.	increases only slowly and moves only slowly across the windscreen.	is easier to detect if the pilot continually moves his/her head.	increases very rapidly just prior to impact.
236.	A function of the vestibular apparatus is to:	enhance hearing ability, especially at high frequencies.	control motion sickness.	maintain spatial awareness.	maintain visual orientation.
237.	A trained pilot, observing an aircraft accident, will, in comparison to a lay observer:	have a much better recollection of the events.	be a reliable expert witness at any accident inquiry.	have stronger expectations about likely set of events.	automatically discount any any previous accident experience.
238.	The amount of stress experienced with a	the actual demands of the task	the perceived demands of the	the actual demands of the	the perceived demands of

	particular task is dependent on:	and the pilot's perception of his ability.	task and the pilot's actual ability.	task and the pilot's actual ability.	the task and the pilot's perception of his ability.
239.	The cycle of REM sleep and stages 1 to 4 sleep occurs:	about every hour.	about every 90 minutes with REM sleep and slow wave sleep equally balanced in each cycle.	about every 90 minutes with the majority of REM sleep taking place in the early cycles.	about every 90 minutes with the majority of slow wave sleep taking place in the first two cycles.
240.	Situational awareness may well be inhibited by the introduction of:	computer generated checklists.	`intelligent' flight decks.	pre-recorded voice warnings.	moving tape displays.
241.	With no visual references outside the cockpit the human eye will normally adjust to a focal length of:	infinity.	less than 2 metres.	about 5 metres.	a few centimetres.
242.	The greatest source of incapacitation in flight is:	acute gastro-enteritis.	angina.	malaria.	heart attack.
243.	Low blood pressure (hypotension) can have the following harmful effect:	it can increase the chances of developing a stroke.	It can be a major factor in the development of a heart attack.	It can reduce the ability of an individual to withstand high positive G forces.	It encourages the formation of cholesterol within the blood.
244.	In communications one `bit' is the quantity of information which.	can be contained in one sentence.	can be transmitted by verbal communication only	reduces the uncertainty of the receiver by 50%.	can be transferred by non-verbal communication only.
245.	The term `Synergy' is the state:	where the individual performance exceeds the performance of the group.	where the group performance exceeds the sum of the individual performances.	where the group performance is dependent on the leadership style of individuals within the group.	of increase in reasoning power when extra oxygen is supplied at a time of emergency.
246.	Who is responsible for Air Safety	Aircrew and Ground Crew	Aircrew, Groundcrew and Management	Everyone involved	Aircrew only
247.	The body get its energy from 1) Minerals 2) Carbohydrates 3) Protein 4) Vitamins	1 & 4 only	2 & 3 only	1,2 & 4	3 & 4 only
248.	Haemoglobin is	Dissolved in the blood	In red blood cells	In white cells of the blood	In the platelets
249.	Having donated blood aircrew should	rest supine for at least 1 hour, drink plenty of fluids and not fly for 48 hours	rest supine for about 15 - 20 minutes, drink plenty of fluids and not fly for 24 hours	Aircrew are prohibited from donating blood	Aircrew are not encouraged to give blood
250.	Smoking reduces the blood's ability to carry oxygen because	The inspiratory tract becomes obstructed	CO_2 takes a larger lung volume	Haemoglobin has a greater affinity for CO	CO gets trapped in the alveoli and restricts internal respiration
251.	A person is suffering from anaemia when	Lacking haemoglobin	b Lacking platelets	Lacking blood plasma	Lacking white blood cells
252.	The average heart beat is	30 - 50 beats a minute	70 - 80 beats a minute	c 90 - 95 beats a minute	100 - 1 10 beats a minute

253.	What is the carcinogenic substance in cigarettes that can modify cells and cause cancer	Tar	Nicotine	Carbon monoxide	Lead
254.	The blood of the pulmonary artery is	rich in oxygen and lacking in CO2	rich in oxygen and rich in CO2	lacking in oxygen and rich in CO2	lacking in oxygen and lacking in CO2
255.	The effects of carbon monoxide	increases with altitude	decreases with altitude	increases with increase of density	decreases with pressure loss
256.	The rate of breathing is controlled by	the amount of CO2 in the blood	partial pressure	differential of concentration levels	the heart rate
257.	What law governs the oxygen transfer at the alveoli ?	Boyle's	Charles's	Henry's	Gas Diffusion Law - Fick's Law
258.	Carbon Monoxide	Can have a severe affect on a pilot's abilities when receiving exposure for a relatively short period of time	Does not have an effect when the body becomes used to the gas over a long period of time	Has no affect on the human body	Is not toxic
259.	The contents of exhaled air contains	less water vapour than the inhaled air	more nitrogen than the inhaled air	more oxygen than the inhaled air	more C02 than the inhaled air
260.	Boyle's Law has a role to play in	Hypoxia with increased altitude	DCS	Gastro-Intestinal Tract Barotrauma	Night vision
261.	What chemical substance in tobacco causes addiction ?	Tar and nicotine	Tar and carbon monoxide	Nicotine and carbon monoxide	Nicotine
262.	The composition of the atmosphere at 21,000 ft is approximately	78% He, 21% O2 and 1 % CO	78% He, 21 % O, and 0.003% CO, + traces	78% N, 21 % O2 and 1 % CO2 + traces	78% N, 21 % O2 and 1 % CO + traces
263.	A few hours after landing a pilot feels pain in his/her joints. The correct action is	Take exercise which will cause the pain to disappear	Take physiotherapy	See an Aviation Medical Specialist as soon as possible	Ignore it since is probably due to common after-effect of height
264.	TUC following loss of pressurization at 35,000 ft is	3 - 4 minutes	5 minutes upwards	30 - 60 seconds	10 - 15 seconds
265.	100% oxygen without pressure can be used up to:	50,000 ft	40,000 ft	60,000 ft	70,000 ft
266.	The Critical Zone of hypoxia begins at	18,000 ft	20,000 ft	23,000 ft	3,600 ft
267.	Under normal conditions which gas diffuses from the blood to the alveoli ?	Oxygen	Carbon Dioxide	Carbon Monoxide	Nitrogen
268.	Under normal conditions, external respiration is a subconscious process that occurs at a rate of	20 to 30 breaths/min, averaging 25 breaths/minute	30 to 40 breaths/min, averaging 35 breaths/minute	15 to 25 breaths/min, averaging 20 breaths/minute	12 to 20 breaths/min, averaging 16 breaths/minute
269.	Concerning hypoxia, why is it more	The effects are increased	It is difficult to recognize the	It is more difficult to	There is no one to take

	hazardous if flying solo ?		first symptoms of hypoxia for a pilot in initial training	manage the oxygen systems on your own	control once the symptoms of hypoxia appear
270.	You have been scuba diving below I Om. When can you next fly	after 12 hours	after 24 hours	after 48 hours	Whenever you wish
271.	As the body ascends, the partial pressure of oxygen within the lungs	decreases at a rate of 3 times the atmospheric rate	decreases at the same rate as that of the atmosphere	stays the same	increases
272.	Hyperventilation can cause	too much oxygen to the brain	spasms in the muscles and possible unconsciousness	bluish tinge under the nails of the fingers and the lobes of the ears	a feeling of euphoria
273.	The partial pressure of carbon dioxide in the lungs is	lower than the partial pressure of C02 in the atmosphere	higher than the pressure of C02 in the blood	lower than the pressure of C02 in the blood	almost equal to the pressure of C02 in the atmosphere
274.	How much air is inhaled and exhaled in one breath ?	70 mls	150 mls	350 mls	500 mls
275.	If you are suffering from hyperventilation, what should you do	close your eyes and relax	breathe 100% oxygen	talk through the procedure out loud and simultaneously control rate and depth of breathing	make an immediate landing
276.	Hyperventilation can, after a long period of time, lead to unconsciousness due to	high level of carbon dioxide due to hypoxia	low partial pressure of oxygen to the brain	the body compensates for low partial pressure of oxygen	prolonged anxiety/stress
277.	What is the percentage of oxygen at 18,000 ft ?	0.05	0.1	0.070	0.21
278.	One of the results of DCS is the "Chokes". The chokes causes problems in the	joints	lungs	brain	heart
279.	Which of the following is a correct statement with regards to carbon monoxide'!	Breathing pure oxygen reduces the effects of carbon monoxide	Haemoglobin has an affinity to carbon monoxide over oxygen of 5 times	Carbon monoxide poisoning can result from nicotine	Carbon monoxide increases the altitude at which hypoxia is experienced prevalent
280.	Hypoxic Hypoxia	can occur at any altitude.	only occurs at altitudes over approximately 10,000 ft. in the case of a healthy individual	is caused by the inability of the blood to carry sufficient oxygen	is not affected by smoking
281.	One of the outcomes of rapid decompression is	Regression	A collapse of the of the middle ear	Cyanosis	Fogging/Misting
282.	Which gas diffuses from the blood to the lungs during external respiration ?	Nitrogen	Air	Carbon dioxide	Nitrogen

283.	TUC for progressive decompression at 30,000 ft is	1 - 2 minutes	3 - 5 minutes	5 - 10 minutes	15 - 20 minutes
284.	On initiating recovery from a spin, the pilot may have a strong sensation of turning	In a direction opposite to that of the spin	In a direction the same as the spin	Slowly upwards	Quickly upwards
285.	If a pilot picks up a pen from the floor of the cockpit while in a turn, he/she may suffer from	Coriolis Effect	Hypoxic hypoxia	Barotrauma	Pressure Vertigo
286.	Presbycusis causes loss of	High tones	Low tones	Both equally	Can be prevented by ear plugs
287.	10Presbycusis is loss of hearing due to age and which effects	high tones first	low tones first	medium tones first	the whole spectrum of tones at the same time
288.	What detects hearing ?	Cochlea	Semi-circular canals	Saccules	Pinna
289.	10What is a stereotype and involuntary reaction to a stimulation ?	data control	a reflex	stimulation control	automatic stimulation
290.	How many semi-circular canals are contained in the ear ?	1	2	3	4
291.	Vertigo can be associated with	The Coriolis Effect	Autokenesis	sweating	shivering
292.	Hearing through bone conduction	by-passes the inner ear	by-passes the outer ear	by-passes outer and the middle ear	is no different from the normal hearing process
293.	Ordinarily, levels of noise	Increase the number of human errors but do not reduce the speed at which work is done	Increase the number of human errors and reduce the speed at which work is done	Decrease the number of human errors but do not reduce the speed at which work is done	Decrease the number of human errors and reduce the speed at which work is done
294.	The amount of light entering the eye is controlled by	The Central Nervous System	The Peripheral Nervous System	The Autonomic (Vegetative) Nervous System	The Secondary Nervous System
295.	Spatial disorientation is when :	The pilot's seat harness is too tight not allowing the pilot to sense the aircraft's attitude changes	There is a mis-match between the information received from the vestibular apparatus and the instruments	The pilot is ignoring illusions	Information from the vestibular apparatus is ignored
296.	When a pilot looks at a near object , the :	Lens flattens	Pupil becomes smaller	Cornea becomes more curved	Cornea changes shape
297.	Which light sensitive cells of the eye are used for night vision ?	Cones	Rods	Cones and Rods	None of the above
298.	Sunglasses	Supply protection for UV and IR	Should possess reasonable luminance	Absorb colour	Straighten the light beams
299.	Sunglasses with variable transmission light sensitive Photochromic lenses	can be disadvantageous when used in the cockpit due to their	are advantageous for pilots	are generally forbidden for use in flight	are ideal as long as they are polarized

		dependence on UV light which is screened by the cockpit glass			
300.	In the indifferent zone altitude band, night vision is affected	up to 3,000m	3,000m - 5,000m	5,000m - 7,000m	up to 5,000m
301.	When the visual image is focused in front of the retina the condition is:	Myopia	Hypermetropia	Presbycusis	Astigmatism
302.	A person suffering from Glaucoma will have	cloudiness of the lens	cloudiness of the cornea	increased pressure of the eye	colour blindness
303.	The function of the retina is to	convert light images into meaningful information	transport electrical impulses to the brain	convert light signals into electrical impulses	convert light signals into chemical impulses
304.	The part of the retina which has the highest visual acuity is	the optic nerve entry point	the retinal optic focus point	the fovea	the outer sections of the retina
305.	Depth perception when objects are close (less than 1 metre) is achieved by	Visual memory	Binocular vision	The blind spot on the retina	Comparison of object sizes
306.	As light decreases, the colour sensitivity of the eye	increases	decreases	is not affected	magnified
307.	Accommodation is triggered by the	The Secondary Nervous System	The Peripheral Nervous System	The Central Nervous System	The Autonomic (Vegetative) Nervous System
308.	Scotopic vision is vision via the	cones	rods	cones and the rods	cornea and the lens
309.	What is the worse type of incapacitation on finals	Sudden	Severe	Intensive	Gradual
310.	The most dangerous type of incapacitation is	Acute	Rapid	Insidious	None of the above
311.	Should a pilot fly with a bad cold he/she could suffer from	Chokes	Bends	Sinus pain	Blurred vision
312.	If a pilot in an unpressurised aircraft suffers from severe flatulence in flight. He/she should	Climb	Descend	Pressure breathe oxygen	Descend rapidly and seek medical advice
313.	If a pilot experiences negative acceleration (-Gz) what is the effect on the pilot's inertia ?	In transverse to the right	In transverse to the left	Downwards and vertical	Upwards and vertical
314.	Even with a small ingestion of alcohol	the brain will be stimulated thereby increasing the resistance to hypoxia	the brain functions will be increased and thereby increasing performance at high altitudes	the pilot will remain unaffected	the pilot will be more susceptible to hypoxia
315.	JAR-OPS specifies a maximum blood alcohol limit. What is it ?	20 milligrams per 100 milliliters	40 milligrams per 100 milliliters	60 milligrams per 100 milliliters	80 milligrams per 100 milliliters

316.	With regard to alcohol	Does not effect performance	Even a small amount will effect performance	Drinking coffee with alcohol reduces the effects	It effects Orthodox sleep
317.	While carrying out a spin in an aircraft the pilot will experience	Angular acceleration	Radial acceleration	Negative acceleration	Static acceleration
318.	Most ozone is found in the	Thermosphere	Ionosphere	Stratosphere	Troposphere
319.	You suffer pain in an ear on a descent. Should you	Put one hand over the effected ear	Level off and, if necessary, climb to the level where it first occurred	Increase the rate of descent	Keep the head still and continue descending at a slower rate
320.	What is the first symptom of high radial acceleration ?	Grey out	Unconsciousness	Red out	Black out
321.	In tropical regions you should	Ensure you put ice into all cold drinks	Drink only from sealed containers	Eat raw vegetables whenever possible	Ensure you eat unpeeled fruit because of possible vitamin loss
322.	To avoid hypoglycemia	A pilot should not eat a meal	A pilot should not eat sugar or sweets	A pilot should eat regularly and ensure a balanced diet	A pilot should eat peanuts because they produce high energy levels
323.	Alcohol is a	Peripheral Nervous System stimulant	Central Nervous System stimulant	Central Nervous system depressant	Vegetative System stimulant
324.	The Flicker Effect	rarely causes spatial disorientation in pilots	is one of the main causes of spatial disorientation in pilots	can result in severe degradation of visual adaption	can result in severe degradation of sensory adaption
325.	Ozone in a pressurized cabin can be eliminated by	Spraying detergents	Climbing to an altitude above 45,000 ft	Avoiding flights above the equator	Using ozone-converters
326.	Anxiety affects 1) Judgement 2) Attention 3) Memory 4) Concentration	1 & 2 only	1 only	1, 2 & 4	All
327.	Hypothermia causes a	Decrease in the demand for oxygen	Increase in the demand for oxygen and eventually lends to unconsciousness	Increase in the demand for oxygen	None of the above
328.	When faced with a problem a pilot should :	Take as much time as he/she needs within the available time to make up his/her mind	Make up his/her mind as quickly as possible to give as much spare time as possible	Make up his/her mind before consulting other crew members	Wait until the last minute to make up his/her mind
329.	Performance can be increased by	putting a student pilot under stress	a moderate amount of stress	no stress at all if possible	ignoring stress as all good pilots leave stress on the ground
330.	The sequence of GAS is.	Alarm Resistance Exhaustion	Resistance Exhaustion Alarm	Alarm Flight Exhaustion	Exhaustion Resistance Alarm
331.	At height cockpit humidity can be between	20-25%	40-60%	30-60%	5-15%

332.	Tuned resonance of the body parts, distressing the individual can be caused by	Acceleration along the horizontal flight path	Resonance between 150 - 250 Hz	Resonance between 16 - 18 Ghz	Resonance between 1 - 100 Hz
333.	If in a state of stress which is impossible to overcome, the pilot will be in a state of	Eustress	Hypertension	Distress	Regression
334.	A person that is exposed to extreme or prolonged stress factors can perceive:	Distress	Eustress	Coping stress	Stressors
335.	What is the relationship between stress and fatigue ?	No stress and no fatigue is good	All stress and fatigue is good	Stress can be good, fatigue is always bad	No stress and some fatigue is good
336.	Extreme cold may be associated with	Aggression	Aggression and anxiety	Anxiety	Contentment or apathy
337.	An individual's perception of stress	depends on the current situation only	is the objective evaluation of a situation and the perceived ability to cope with it	is the subjective evaluation of a situation and the perceived ability to cope with it	depends on the individual's arousal
338.	Stress Management strategies normally involve	Only the prevention of stress	Only the removal of stress	the use of drugs	the prevention and the removal of stress
339.	Motor programmes	are stored as rules in the long term memory	are behavioural sub-routines	require conscious though to engage	are natural reactions
340.	What error rate can be expected to be given reasonable training ?	1 in 100,000	1 in 10,000	1 in 1,000	1 in 100
341.	What human error rate is considered to be the norm ?	1 in 10	1 in 100	1 in 1,000	1 in 10,000
342.	Age	generally decreases pilot's performance	generally increases pilot's performance	generally has little effect on pilots' performance since it is compensated for by experience	generally increases performance until approximately the age of 32 and therefore generally decreases performance
343.	The thinking concerning human error has changed recently to	Human error is inherent and inescapable	It has been accepted that human error will always be made but can be decreased by training and technology.	Error can be eliminated completely in the future	Human error can be avoided through vigilance and expansion of knowledge
344.	Mental models of the world are based on	past experiences and sensory information	past xperiences only	past experiences and motor programmes (skills)	only sensory information
345.	Mental rehearsal is useful for	all pilots	instructor pilots only	only for pilots with a specific level of experience	student pilots only
346.	When problem-solving, what determines the transition from rule-based activities to knowledge-based activities	Knowledge of rules that apply for the problem	Unsuitability of automated actions	Unsuitability of known rules for the problem posed	Lack of knowledge of the rules

347.	When do we change from Rule Based Behaviour to Knowledge Based Behaviour ?	When we choose to do so	When we do not know the rules	When rules do not apply	When we become highly experienced
348.	Very high ambition and drive for success can lead to	conflict in the cockpit	improved performance	a "laiser faire" cockpit situation	improved cohesion and mutual consideration
349.	With respect to Maslow's hierarchy of needs (1943) he expounded that	Motives lower in the hierarchy are aroused first and must be satisfied first	Motives higher in the hierarchy are aroused first and must be satisfied first	Motives in the middle of the hierarchy are aroused first and must be satisfied first	Any level may be aroused and there is no significance as to which must be satisfied first
350.	With respect to the subcutaneous pressure receptors, they sense	The condition of the body	Spatial orientation of the body	Pressure on the body indicating true vertical	Environmental conditions
351.	A pilot is accustomed to a runway with a width of 27m and lands on an unfamiliar runway with a width of 42m. The pilot will tend to	Fly a too high an approach and overshoot	Fly a too low an approach and overshoot	Fly a too high an approach and undershoot	Fly a too low an approach and undershoot
352.	The Gestalt Theory relates to	Motivation	Perception and organisation	Personality traits	Faults and slips
353.	When staring at an isolated light at night, the light may appear to	vary in size	move	vary in colour	vary in intensity
354.	Illusions that pilots experience in conditions of fog, snow or mist are that	Objects appear further away than they really are	Objects appear closer than they really are	Objects appear to move slower than they really do	Objects appear to move faster than they really do
355.	Cognitive illusions are caused by:	Poor interpretation of cockpit instruments	Lack of external reference points	Conflict between different senses	Erroneous mental model resulting from a misinterpretation of sensory inputs
356.	What should you do if disorientated at night:	Ignore your instruments	Look at the horizon	Descend	Rely on your instruments
357.	Where are the Pressoreceptors located ?	In the heart	In the skin	In the carotid sinus	In the intestines
358.	The illusion that the aircraft is taxiing too fast can be caused by	Snow and a tailwind	Snow and a tail wind	Rain and a headwind	A unaccustomed high distance of the cockpit from the ground
359.	Errors in the judgment of height on an approach are more likely over	snow	mountains	jungle	rough seas
360.	To cure Autokinesis	First focus on the light with the right eye and then the left	Shake the head and turn down the cockpit lights	Look at the light out of the corner of your eye	Look for other references inside and outside the cockpit and use peripheral vision
361.	The Seat-of -the-Pants sensation emanates from receptors in the	Utricles and Saccules	Semi-circular canals	muscles and joints sensitive to the movement and	skin

				position of the body	
362.	On an approach at night in rain onto a runway with approach lighting it is it not unusual for the approach to appear	Slower than it actually is	Faster than it actually is	normal	curved
363.	Flying by the "seat of one's pants"	gives a feeling of coming up and out of your seat	Is not reliable and does not indicate spatial orientation	Is reliable and indicates spatial orientation	Is not reliable and indicates spatial orientation
364.	1) Paradoxic sleep refreshes the brain, memory and body. 2) Paradoxic sleep decreases during the night. Which is correct?	1 & 2	1 only	2 only	Neither
365.	What characterizes a self-centered cockpit ?	Autocratic Captain assures a synergistic cockpit	Crew member tends to do their own jobs independently without keeping other informed	A synergistic cockpit	A non-synergistic cockpit in which the Captain tends to be authoritarian
366.	Attitude is	a synonym of behaviour	a genetic predisposition to be biased either positively or negatively	acting and thinking subjectively	How a person responds to another person, situation or organisation either positively or negatively
367.	Personality is based on: 1) Heredity 2) Childhood 3) Upbringing 4) Experience	None of the above	1, 2, and 4.	All of the above	2, 3 and 4
368.	During the pre-flight brief the aircraft commander should:	Delegate all duties to all crew members for the entire flight	Emphasise that he/she is in charge	Emphasise areas requiring good crew co-ordination	Ensure all points are covered for the flight to avoid repetition in the cockpit?
369.	Attitude is	part of personality and cannot be changed in an adult	a person's response to a situation, person or object	the same as behaviour	stable and cannot be changed in an adult
370.	Leadership qualities should include 1) A dominant style 2) Laiser Faire 3) Technical competency 4) Good communications	1, 2, 3 and 4	1 & 2 only	2 only	3 & 4 only
371.	Which of the following statements is correct ?	Personality is easily changed	Attitudes do not change in the long-term	Behaviour is the outward result of personality and attitude	Attitude is the outward result of behaviour and personality
372.	What is not a useful element of good feedback ?	Tailor to the individual	Enable response and discussion	Specifically target each individual's failings	Should be understood by all
373.	What constitutes effective communications ?	Speaking in a variety of mother tongues	Using different context which would be understood by the receiver	Considering cultural differences	Using commonly understood context, language and

					metacommunications
374.	What is the main purpose of pre-flight briefings ?	To allow the Captain to assert his/her authority	To allow individual crew member to prepare their own responses to likely or problematic events	They form general information about the flight but they contain no specific reference to likely or problematic events	They form information about the flight and allocate responsibilities and reactions to likely or problematic events
375.	Pilots should	have a good command of the English language	have at least a limited English vocabulary	be able to understand key words and phases only since these are sufficient to sufficiently impart meaning	be able to have a command of a local language since this is sufficient and legal in an emergency
376.	Which of the following elements of communications is most likely to lead o misunderstanding ?	Coding and decoding a message	The Receiver's mood	Expectation (What you expect to hear)	The Sender's nationality
377.	In communication which element shows that information has been received and understood ?	Encoding	Decoding	Feedback	Synchronization
378.	With regards to anticipation, which of the following would most likely to result in the occurrence of a hazardous situation ?	mishearing the contents of an air traffic controller's non-standard clearance when a standard procedure was anticipated.	anticipation of a check list	anticipation of weather	anticipation of a longer flight time than expected
379.	Which of the following statements are correct with reference to automation ?	Automation increases Situational Awareness	Enables the pilot to respond to unusual situations better since there is no need to monitor automatics.	Reduces pilot's attention since they can be out of the loop	Saves time
380.	Murphy's Law states that	Even if a system can be designed correctly, it will always be mis-used	If a system can be operated incorrectly, sooner or later it will be	If a system can be operated incorrectly it should be guarded	If a system can be operated incorrectly it should be backed up by a second system
381.	The alerting system for an important system failure should be	a flashing visual signal - preferably red	a doll's eye indicator	an audio warning	a steady visual signal - preferably red
382.	The introduction of automation and improvements in glass cockpit designs	can sometimes be detrimental to performance as some systems provide poor quality feedback to pilots	give better communications in the cockpit, as pilots have more time to communicate	improve man/machine interface due to artificial intelligence in modern FMS	almost completely remove the need to communicate with ATC
383.	Check lists are most important when	flying an aircraft which you have flown many times before.	flying an aircraft with which you are not familiar and when	conducting a long flight	flying an aircraft in which you are current

			under stress		
384.	Errors resulting from a bad indexing system in a checklist or manual are related to a mismatch between	Software to Hardware	Liveware to Software	Liveware to Environment	Liveware to Liveware
385.	SOP's in the cockpit must	only be tailored to the type of aircraft regardless of current MCC procedures	follow implicitly the manufacturer's suggestions and not reflect the Operator's cockpit procedures	be shared by the members of the crew and modified/updated so as to maintain as much synergy as possible	be tailored to the individual pilot's needs and requirements
386.	The term `complacency' means	to query and double-check possible solutions	synergy between the co-pilot and the Commander emanating from CRM procedures	physiological problems resulting from the fear of flying	unjustified self-confidence resulting in careless negligence
387.	With reference to decision-making, it is	An automatic function	Conscious and voluntary after assessing the options	An arbitrary decision	A systematic and analytical process
388.	A efficient flight deck crew is one which	respect each other's decision and views	is a constituted crew	respect each other's political and religious persuasions	is laiser faire
389.	Confirmation Bias of the decision-making process is	To ignore information which indicates that a hypothesis or decision is poor	Not to seek information which confirms the decision	Not to look for information which would reassure the correct decision	To look for facts that confirm expectations before making a decision
390.	The semi-circular canals react to	Linear acceleration	Heat	Temperature	Angular acceleration
391.	With what is "Mode Error" associated ?	Leadership	Motivation	Automation	Homeostasis
392.	The brain controls breathing rate based upon the	The amount of oxygen required at the capillaries	The acidity of the blood	Pulse rate	Sweat glands
393.	Why is it essential to ensure that the combustion heater is serviceable in an aircraft ?	To prevent carbon dioxide poisoning and possible fire	To prevent carbon dioxide poisoning, possible fire or explosion	To prevent carbon dioxide poisoning	To prevent carbon monoxide poisoning
394.	Short term memory (Working Memory) can be improved through	practice and retrieval	chunking and association	rehearsal and practice	rehearsal and retrieval
395.	Tidal Volume is the volume of air	remaining in the lungs after the most forceful expiration	b that can still be exhaled by forceful expiration after the normal tidal expiration	that can still be inhaled over and beyond the normal breath	inhaled and exhaled with each normal breath
396.	Approximately ....% of all accidents are caused by Human factors	50	95	20	70
397.	Linear acceleration may give a false impression of a	Climb	Descent	Turn	Spin

398.	When suffering from Hypoxic Hypoxia short-term memory impairment starts at approximately	10,000 ft	12,000 ft	14,000 ft	16,000 ft
399.	A free running circadian rhythm exhibits a periodicity of approximately	23 hours	24 hours	25 hours	26 hours
400.	Rain on the windscreen at night tends to lead to	Too steep an approach and the threshold appears to be more distant than it is in fact	Too shallow an approach and the threshold appears to be more distant than it is in fact	Too steep an approach and the threshold appears to be closer than it is in fact	Too shallow an approach and the threshold appears to be closer than it is in fact
401.	The Vestibular Apparatus consists of the	Cochlea and the auditory nerve	Eustachian tube and the semi-circular canals	Semi-circular canals and the otoliths	Eustachian tube and the pinna
402.	To overcome disorientation in IMC conditions it is advised to	Look out at the horizon	Believe the instruments	Keep the head as still as possible	Get relief from look-out duties
403.	Our primary source of spatial orientation is	Sight	The ears	The Cortex	The Cerebellum
404.	The twin objectives of Human Performance are	Knowledge of the limitations of the body and their significance in aviation	Flight Safety and self-awareness	The safety and efficiency of the operation and the well-being of the individual	Physical fitness and good decision-making
405.	Haemoglobin is manufactured mainly in the	Liver	Heart	Bone Marrow	Capillaries
406.	Which of the following statements is correct ?	Automation always improves Situational Awareness	It has been shown that approximately 80% of all communications is achieved by metacommunications	The Black Hole Effect generally leads to a steep approach	A mix of status and role is the best way to constitute a flight crew
407.	Normal cabin pressure is	10,000 ft.	5,000 ft	3,000 ft - 4,000 ft	6,000 ft - 8,000 ft
408.	The function of the Eustachian tube is to	Equalise the pressure between the outer and middle ear	Equalise the pressure between the outer and inner ear	Equalise the pressure between the inner and middle ear	Equalise the pressure between the tympanum and the inner ear
409.	If you wear contact lenses while flying, you must also	Inform the company aviation medical specialist of your condition	Make sure that they are correctly oiled, cleaned and maintained	Take a spare pair of contact lenses with you and ensure they are immediately available	Take a pair of ordinary corrective spectacles with you and have them immediately available
410.	Generally the most common cause of accidents to aircraft is	CFIT	MAYDY	RADA	EMERG
411.	Stimuli must be of a certain strength for the receptors to pick them up. This is called	Sensory threshold	Sensory filter	Sensory strength	Sensory volume
412.	The main limitation of the Central Decision-maker is	It is dual channelled processing	It is single channelled processing	It is slow	It multi channelled processing
413.	The Cocktail Party Effect is an example of	Selective attention	Divided attention	Selective Communication	Divided Communication

414.	What 2 factors will bring a person temporarily from the Automatic phase stage of a motor programme into the Associative stage ?	Fatigue and stress	Lack of practice and stress	Loss of Situational Awareness and fear	Anxiety and fatigue
415.	What are the 3 reactions of the GAS syndrome ?	Alarm, Resistance and Exhaustion	Alert, Resistance and Exhaustion	Temporal, Cognitive and Resultant	Psychological, Psychosomatic and Somatic
416.	With a pulse rate of 72 beats a minute and a stroke volume of 70 ml, what is the cardiac output ?	8 litres a minute	6 litres a minute	5 litres a minute	7 litres a minute
417.	If the sensory threshold is increased	Selectivity is increased	Selectivity is decreased	Sensitivity is reduced	Sensitivity is increased
418.	What happens to the Systolic blood pressure if peripheral resistance is increased ?	Systolic blood pressure rises	Systolic blood pressure decreases	Systolic blood pressure is unaffected	Systolic blood pressure initially decreases and then increases
419.	On expiration there is	Higher C02 content than on intake	More oxygen content than on intake	Less water vapour content than on intake	The same C02 content as on intake
420.	Hearing through bone conduction	by-passes the inner ear	by-passes the outer ear	by-passes outer and the middle ear	is no different from the normal hearing process
421.	What is the ideal personality for a pilot ?	G+ P+	A team player	Stable Extravert	Synergistic
422.	Once a mental model is constructed, there is a tendency to give	undue weight to information that contradicts the model	equal weight to information that contradicts and confirms the mental model	c frequent alterations to the mental model	undue weight to information that confirms the model
423.	A pilot inputting information from an altimeter can be expressed in terms of the SHELL Concept as	L-H	S-L	P - R	H-E

CPL Composite (Meteorology)

SL	question	option_1	option_2	option_3	option_4
1.	The international standard atmosphere assumes a lapse rate of:	2°C/1000 ft	1.5°C/1000 ft	3°C/1000 ft	1.98°C/1000 ft
2.	The tropopause is:	The line where the temperature no longer decreases with increase of height.	The layer between the tropopause and the stratosphere.	The layer beyond which only Cl cloud occurs.	The line indicating clear air turbulence.
3.	One of the most important characteristics of the atmosphere is:	Density is constant above 10 000 ft.	The air is a poor conductor of heat.	Temperature lapse rate is very frequently above 3°C per 1000 ft.	The air is a good conductor of heat.
4.	Most of the vapour in the atmosphere is contained in the:	tropopause	stratosphere	troposphere	stratopause
5.	The main Ozone layer is to be found in the:	thermosphere	troposphere	mesosphere	stratosphere
6.	The level in the atmosphere where the air temperature ceases to fall with increase in height is known as:	The troposphere.	The Stratopause.	The Stratosphere.	The tropopause.
7.	The atmosphere is a mixture of gasses of the following proportions:	oxygen 21% nitrogen 78% other gasses 1%	oxygen 21% hydrogen 78% other gasses 1%	nitrogen 78% argon 21 % oxygen 1	nitrogen 78% oxygen 21 % hydrogen 1
8.	In the ISA the temperature is isothermal:	Up to 36 090 ft/11 kms	From 36 090 ft/11 kms to 65 617 ft/20 kms.	From 36 090 ft/11 kms to 104 987 ft/32 kms.	From 36 090 ft/11 kms to 45 090 ft/13.75 kms.
9.	At sea level the ISA density is stated to be:	1225 grammes per cubic metre	1252 grammes per cubic metre	1013.2 mb (hpa)	29.6 inches of mercury
10.	The barometric Pressure at the airfield datum point is known as:	QNE	QNH	QFE	Standard Pressure
11.	The instrument that gives a continuous printed reading and record of the atmospheric pressure is:	barometer	hygrometer	anemograph	barograph
12.	When considering the actual tropopause which statement is correct:	it is low over the poles and high over the equator	it is high over the poles and low over the equator	it is the same height of 36090 ft all over the world	It is at a constant altitude of 26000'
13.	Atmospheric pressure may be defined as:	the weight of the atmosphere exerted on any surface with which it is in contact	the weight of the atmosphere at standard sea level	the force per unit area exerted by the atmosphere on any surface with which it is in contact	a pressure exerted by the atmosphere of 1013.2 mbs
14.	You are passed an altimeter setting of	QFF	1013	1000	QFE

	`29.53'. You would then set your altimeter subscale to:			
15.	The aerodrome QFE is:	the reading on the altimeter on an aerodrome when the aerodrome barometric pressure is set on the sub scale	the reading on the altimeter on touchdown at an aerodrome when 1013.2 is set on the sub scale	the reading on the altimeter on an aerodrome when the sea level barometric pressure is set on the sub scale	the aerodrome barometric pressure.
16.	The aerodrome QNH is the aerodrome barometric pressure:	corrected to mean sea level assuming standard atmospheric conditions exist	corrected to mean sea level, assuming isothermal conditions exist	corrected for temperature and adjusted to MSL assuming standard atmosphere conditions exist	corrected to MSL using ambient temperature.
17.	An isobar on a meteorological chart joins all places having the same:	QFE	QFF	QNH	QNE
18.	The tropopause in mid latitudes is:	Lower in summer with a lower temperature.	Lower in winter with a higher temperature.	Lower in summer with a higher temperature.	Lower in winter with a lower temperature.
19.	In the troposphere:	over cold air, the pressure is higher at upper levels than at similar levels over warm air	over cold air, the pressure is lower at upper levels than at similar levels over warm air	over warm air, the pressure is lower at upper levels than at similar levels over warm air	the upper level pressure depends solely on the relative humidity below
20.	Subsidence in an anticyclone produces:	saturated air and an inversion	dry air and an inversion	isothermal dry and stable air	increased pressure at the surface
21.	With an anticyclone over the UK the expected weather is:	Thunderstorms in summer, fog in winter.	Stratus in summer with drizzle, CU and snow in winter.	Clear skies or fair weather CU in summer, fog in winter	Clear skies in summer with haze, cold frontal weather in winter.
22.	A small low established within the circulation of another low is called	a trough	a col	an anticyclone	a secondary depression
23.	when flying towards a depression at a constant indicated altitude, the true altitude will be:	Lower than indicated.	Higher than indicated.	The same as indicated.	Lower than indicated at first then the same as indicated later.
24.	A trough of low pressure is generally associated with:	convergence causing increased cloud and precipitation	divergence causing increased cloud and precipitation	subsidence causing increased cloud and precipitation	subsidence causing decreased cloud and precipitation
25.	A ridge of high pressure is generally associated with:	convergence causing increased cloud and precipitation	divergence causing increased cloud and precipitation	divergence causing cloud to break up and more precipitation	divergence and subsidence causing clear skies and good weather
26.	An area of indeterminate pressure between two lows and two highs is called:	a trough	a ridge	a col	a saddle

27.	A trough of low pressure is:	a trougha small low established within the circulation of another low	a ridgean extension or elongation of a low pressure system along an axis on each side of which pressure increases	a centre of pressure surrounded on all sides by higher pressure	an area where the pressure is lower than anywhere else in the area
28.	The name given to the lowest forecast mean sea level pressure in an area is:	QFE	Regional QNH	QFF	QNE
29.	The Altimeter will always read	With 1013 set the altitude above MSL	With airfield QNH set the height above the airfield datum	The vertical distance above the pressure level set	the correct flight level with regional QFE set.
30.	QNH at Johannesburg is 1025 hPa, elevation is 1600m amsl. What is the QFE. (Assume I mb = 8m)	1000.8 hPa	830.6 hPa	1002 hPa	825 hPa
31.	The measurement of surface temperature is made:	at ground level	at approximately 10 metres from ground level	at approximately 4 feet above ground level	at approximately 4 metres above ground level
32.	If temperature remains constant with an increase in altitude there is:	an inversion	an inversion aloft	uniform lapse rate	an isothermal layer
33.	The surface of the earth is heated by:	convection	conduction	long wave solar radiation	short wave solar radiation
34.	Diurnal variation of the surface temperature will:	be unaffected by a change of wind speed	decrease as wind speed increases	increase as wind speed increases	be at a minimum in calm conditions
35.	Most accurate temperatures above ground level are obtained by:	tephigram	aircraft reports	temperature probe	radio sonde
36.	The diurnal variation of temperature is:	greater over the sea than overland	less over desert areas then over temperate grassland	reduced anywhere by the presence of cloud	increased anywhere as wind speed increases
37.	An inversion is one in which:	there is no horizontal gradient of temperature	there is no change of temperature with height	there is an increase of temperature as height increases	there is a decrease of temperature as height increases
38.	The sun gives out _____ amount of energy with_____ wavelengths.	Large, large, small, small.	Small, small, large, large.	Large, large, small, large.	Large, small, small, large.
39.	Over continents and oceans, the relative temperature conditions are:	Warmer in winter over land, colder in summer over sea.	Colder in winter over land, warmer in winter over sea.	Cold in winter over land and sea.	Warmer in summer over land and sea.
40.	During a night with a clear sky, surface temperature will -----------RH will ----------------and Dewpoint will---------------?	Fall, Rise, Rise.	Rise, Rise, Fall.	Fall, Rise, Remain the same.	Fall, Fall, Remain the same
41.	A change of state directly from a solid to a vapour or vice versa is:	insolation	condensation	evaporation	sublimation
42.	The process of change of state from a gas	evaporation in which latent	evaporation in which latent	condensation in which	condensation in which

	to a liquid is:	heat is absorbed	heat is released	latent heat is absorbed	latent heat is released
43.	The process of change of state from a liquid to a gas is:	condensation in which latent heat is released	evaporation in which latent heat is released	condensation in which latent heat is absorbed	evaporation in which latent heat is absorbed
44.	Relative humidity is:	air temperature over wet bulb temperature x 100	air temperature over dew point temperature x 100	the actual amount of water vapour in a sample of air over the maximum amount of water vapour that the sample can contain x 100	the maximum amount of water vapour that a sample of air can contain over the actual amount of water vapour the sample does contain x 100
45.	The wet bulb temperature:	is measured using a hydrometer	is the minimum temperature to which a thermometer bulb can be cooled by the evaporation of water	measures the dew point of the air	is the minimum temperature reached by the surface of the earth as measured by a thermometer placed 1.2 metres above the ground
46.	When water vapour changes to ice:	Latent heat is absorbed.	Specific heat is released.	Latent heat is released.	Specific heat is absorbed.
47.	If the ELR is 0.65°C/ 100m	Atmosphere is conditionally stable	Atmosphere is stable	Atmosphere is unstable	Atmosphere is stable when dry
48.	ELR is 1°C/100m	Neutral when dry	Absolute stability	Absolute instability	Conditional stability
49.	Why does air cool as it rises?	It expands	It contracts	The air is colder at higher latitudes	The air is colder at higher altitudes
50.	From which of the following can the stability of the atmosphere be determined?	surface pressure	surface temperature	DALR	ELR
51.	When the upper part of a layer of warm air is advected:	Stability increases within the layer	Stability decreases within the layer	Wind speed will always decrease with increase in height in the Northern Hemisphere	Both A & B
52.	Which of the following gives conditionally unstable conditions?	1°C/100m	0.65°C/100m	0.49°C/100m	None of the above
53.	What happens to stability of the atmosphere in an isothermal layer? (Temp constant with height)	Absolutely stable	Unstable	Conditionally stable	Conditionally unstable
54.	What is the effect of a strong low level inversion?	Good visibility	Calm conditions	Turbulence	Unstable conditions
55.	In still air a lapse rate of 1.2°C/l00m refers to:	DALR	SALR	ELR	ALR

56.	What happens to the temperature of a saturated air mass when descending?	it heats up more than dry because of expansion	it heats up less than dry because of evaporation	it heats up more than dry because of compression	it heats up less than dry because of latent heat released during condensation
57.	The DALR is	Variable with time	Fixed	Variable with latitude	Variable with temperature
58.	A parcel of air cooling by 1°C/100m is said to be?	Conditionally stable	Conditionally unstable	Unstable	Stable
59.	For the formation of mountain waves, the wind above the level of the ridge should:	Decrease or even reverse direction.	Increase initially then decrease.	Increase with little change in direction.	Increase and then reverse in direction.
60.	Maximum turbulence associated with the standing waves is likely to be:	Two wavelengths down wind and just above the surface.	Approximately one wavelength down wind of, and approximately level with, the top of the ridge.	Just bellow the tropopause above the ridge.	Down the lee side of the ridge and along the surface.
61.	The significance of lenticular cloud is:	There may be mountain waves present and there will be severe turbulence.	There are mountain waves present but they may not give severe turbulence.	A Fohn wind can be expected with no turbulence.	A Katabatic wind is present which may lead to fog in the valleys.
62.	For standing waves to form, the wind direction must be near perpendicular to a ridge or range of mountains and the speed must:	Decrease with height within a stable layer above the hill.	Increase with height within an unstable layer above the hill.	Decrease with height within an unstable layer above the hill.	Increase with height within a stable layer above the hill.
63.	Mountain waves can occur:	Up to a maximum of 5000 ft above the mountains and 50 nm to 100 nm downwind.	Up to mountain height only and 50 nm to 100 nm downwind.	Above the mountain and downwind up to a maximum height at the tropopause and 50 nm to 100 nm downwind.	In the stratosphere.
64.	A cyclone and an anticyclone have the same pressure gradient and the same 2000 ft wind speed. This can only happen when:	They are at identical latitudes in opposite hemispheres.	They are in the same hemisphere but the cyclone is at a lower latitude.	They are in the same hemisphere but the anticyclone is at a lower latitude.	The cyclone is due north of the anticyclone in the northern hemisphere.
65.	During the day the surface wind in western Australia is 270/30 kt. After dusk the wind is most likely to be:	255/40	260/20	290/20	290/40
66.	A gust of wind often causes a veer in the surface wind (Northern Hemisphere) because:	It strengthens pressure gradient force.	It increases coriolis force.	It increases centrifugal force.	It lifts the air above the friction layer.
67.	When a Fohn wind occurs:	There are unstable conditions on the downwind side of the	Air is cooled mainly at the DALR on the upwind side of	Windspeed must be at least 15 kt at the surface	Air is cooled mainly at the SALR on the upwind side of

		mountain.	the mountain and is heated at the SALR on the downwind side.	increasing with height and maintaining direction.	the mountain and is heated mainly at the DALR on the downwind side.
68.	The geostrophic wind blows:	Parallel to curved isobars.	When pressure values are changing rapidly.	In a tropical revolving storm.	When the coriolis force and pressure gradient force are equal.
69.	A strong wind that rises suddenly, last for some minutes and dies comparatively suddenly away is called:	a gust	a squall	a gale	a blast
70.	The force which causes the air to flow parallel to the curved isobars is called:	pressure force	centrifugal force	coriolis force	gradient force
71.	The deflection of the surface wind direction from the geostrophic is, on average:	over the land by night - 35 ° in cloudy conditions	over the land by day - 35' in cloudy conditions	over the sea - 30°	over the sea - 10°, veered in the southern hemisphere
72.	A ravine or valley wind:	Is a wind blowing at increased speed along a valley.	Is a wind blowing from a hill to a valley below.	Is a wind blowing up a hill from a valley.	Is a wind blowing at reduced speed along a valley.
73.	The size of raindrops from a cloud is greater if:	Air is stable and cloud is layer type.	Air is unstable and cloud is heap type.	Cloud type is AC or NS.	The relative humidity is high.
74.	Which piece of equipment is used to measure cloud base:	barograph	hygrometer	alidade	barometer
75.	In aerodrome reports and forecasts the height of the cloud base refers to:	the height above mean sea level	the height above aerodrome elevation	the pressure altitude of the cloud base	the height above the average ground level for the area
76.	Low cloud in temperate climates, excluding heap are those existing from:	the surface to 6500 ft	1000 ft to 6500 ft	the surface to 7500 ft	the surface to 7500 metres
77.	Lumpy or heaped white cloud is:	altocirrus	cumulus	cumulonimbus	nimbostratus
78.	In temperate latitudes which statement is correct:	Ci only occurs above 15000 ft	Ci only occurs above 16500 ft	Ci only occurs above 25000 ft	Ci only occurs above 30000 ft
79.	The turbulence associated with cumulus cloud is:	Moderate.	Slight to nil.	Nil.	Moderate possibly severe.
80.	On weather charts, the station circle shows the height of the cloud base:	above ground level	above mean sea level	at a pressure altitude	in metres above surface level
81.	Which of the following clouds is never a hazard to aviation:	Nimbostratus	Noctilucent cloud	Cumulonimbus cloud	Stratus cloud
82.	If you observe drizzle falling, the cloud above you is most likely to be:	AS	CU	ST	NS
83.	Clouds formed by convection will always:	Be layer clouds.	Be CU CB or NS.	Have a rising cloud base and	Form only in Polar maritime

				may develop into CB as the day progresses.	air.
84.	The type of cloud from which continuous moderate or heavy rain is likely to fall is:	large cumulus	altostratus	nimbostratus	cumulonimbus
85.	The movement of cool moist air over a warmer surface is likely to cause:	cumulus or cumulonimbus cloud	advection fog	nimbostratus cloud	alto cumulus lenticular cloud
86.	Intensity of precipitation is described as either:	intermittent, continuous or showery	drizzle, rain or snow	slight, moderate or heavy	intermittent, moderate or heavy
87.	The term "shower" implies that:	precipitation is in the form of rain and is continuous	precipitation is from cumulonimbus cloud and lasts for short periods	precipitation is intermittent and is from strato form cloud	precipitation is continuous for long periods from cumuloform cloud
88.	Precipitation in the form of snow will not reach the surface unless the surface temperature is:	less than +4°C	less than 0 ° C	less than 45°F	less than 30°F
89.	The type of precipitation in which visibility is likely to be most reduced:	drizzle	snow	light rain	sleet
90.	If there are small cumulus in the morning in summer, it is reasonable to forecast later in the day:	Clear skies.	St and drizzle.	CB Cloud.	Haze.
91.	Hazards of the mature stage of a TS cell include lightning, turbulence and:	microburst, windshear and anvil	icing, microburst and windshear	icing, drizzle and microburst	windshear, hail and fog
92.	On a significant weather chart the thunderstorm symbol signifies:	moderate turbulence and moderate icing	severe turbulence and severe icing	moderate turbulence and severe icing	moderate/severe turbulence and/or moderate/severe icing
93.	During the .... stage of a thunderstorm cell, the cloud contains .... Complete the above statement correctly using one of the following:	building/up currents and down currents	mature/up currents and down currents	dissipating/up currents and down currents	building/down currents only
94.	The following is unlikely to be a hazard below a thunderstorm:	Severe turbulence.	Severe icing.	Windshear.	Large variations in pressure setting values.
95.	Hail grows by:	Freezing as it leaves the cloud.	By up and down progress in CU cloud.	By collision with supercooled water drops.	By collision with ice crystals.
96.	A microburst usually lasts for………and is about……….across.	20 minutes 20 nm	5 minutes 5 km	30 minutes 10 nm	45 minutes 5 nm
97.	When flying through an active CB cloud, lightning strikes are most likely:	Above 5000' and underneath the anvil.	In the clear air below the cloud in rain.	In the temperature band between +10°C and -10°C.	At or about 10 000 ft AMSL.
98.	Regarding thunderstorms, the most	There will always be windshear	The average movement is in	If the cloud base has a	The number of lightning

	accurate statement amongst the following is:	under the cloud.	accord with the wind at 10 000 ft.	temperature below 0°C then freezing rain will occur.	flashes is directly proportional to the degree of turbulence.
99.	Radiation fog is most likely at an inland airfield in the UK with a relative humidity of 80% in the…… with……and a wind of…………	Autumn clear skies 2-8 knots	Spring 6/8 ST& SC 2-10 knots	Winter clear skies 15/20 knots	Summer clear skies no wind
100.	Advection fog is formed when……… air moves over a………….surface and is………… its dewpoint:.	humid cold kept above	Warm moist cooler cooled below	dry frozen well below	warm moist warmer kept above
101.	Radiation fog is most likely:	With a wind speed up to 15 kt, a clear sky and a high relative humidity.	With a wind of 2-8 kt, a high density and the summer season.	In an anticyclone in winter.	On a hill in autumn.
102.	Changes of RVR are reported for increments of:	25 m up to 250 m	25 m up to 200 m	50 m between 300 m and 800 m	50 m between 500 m and 800 m
103.	Frontal fog is most likely to:	form ahead of a vigorous fast moving cold front	form ahead of a warm front	form on a vigorous cold front and last for many hours	form to the rear of a warm front but only last for 1 to 2 hours
104.	Fog may be defined as:	a reduction of visibility to less than 1000 metres due to the presence of water vapour in the atmosphere	a reduction of visibility to less than 1000 metres due to the presence of water droplets in suspension in the atmosphere	a reduction of visibility to less than 1500 metres due to the presence of water droplets in suspension in the atmosphere	a reduction of visibility to less than 1000 ft due to the presence of water vapour in suspension in the atmosphere
105.	Advection fog:	Only occurs at night and early morning.	Is most likely with Polar Maritime air.	Will only clear by insolation.	Can sometimes last for 24 hours or more in winter.
106.	In circumstances where there is a clear sky, calm wind and a high relative humidity in Autumn:	Radiation fog is likely over night.	Advection fog will form.	Radiation fog is likely at sunrise after previous mist.	Hill fog can be expected.
107.	At a station equipped with IRVR, reports are given:	Every '/2hour.	When the normal visibility is 1500 m or less.	When there is mist.	When there is haze.
108.	Hoar frost forms on an aircraft when:	the aircraft suddenly enters a cloud at below freezing temperature	the aircraft in sub zero clear air suddenly enters a colder region	the aircraft in sub zero clear air suddenly enters a warmer moist region	the aircraft suddenly enters a cloud which is at a higher temperature than the surrounding air.
109.	Stratus cloud of limited depth at a temperature of-5°C will most likely give:	moderate to heavy rime ice	moderate to heavy glaze ice	light to moderate rime ice	light to moderate glaze ice
110.	Clear ice forms as a result of.	large supercooled water droplets spreading as they	ice pellets splattering on the aircraft	small supercooled water droplets splashing over the	water vapour freezing to the aircraft

		freeze		aircraft	
111.	Carburettor icing is unlikely:	In cloud.	At temperatures between -10°C and -30°C.	In clear air.	When the RH is 40%.
112.	Mixed (rime and clear) icing is most likely to be encountered:	in nimbostratus at a temperature of -10°C	in stratocumulus cloud at a temperature of-20°C	in fair weather cumulus at a temperature of -15 °C	in towering cumulus at a temperature of-10°C
113.	Kinetic heating will:	Increase the risk of icing if it raises the airframe temperature to just below 0°C.	Increase the risk of icing if it raises the airframe temperature to just above 0°C.	Always increase the risk of airframe icing.	Always decrease the risk of airframe icing.
114.	An air mass that has travelled over an ocean is known as:	continental air and has a high humidity	continental air and has a low humidity	maritime air and has a high humidity	maritime air and has a low humidity
115.	If air in transit is heated from below it tends to become more:	stable	neutrally stable	unstable	none of these
116.	The weather associated with polar maritime air is:	overcast, moderate drizzle	overcast moderate intermittent rain	broken cloud, light, moderate or heavy rain	broken cloud, moderate continuous rain
117.	Tropical continental air normally brings to the UK:	hot dry cloudless weather with a thick haze	warm weather with broken Cu and showers on coasts, visibility very good except in showers	warm dry cloudless weather with very good visibility	hot dry cloudless weather on coasts but Cu building up inland with rain showers, visibility good except in showers
118.	Referring to the area of the North Atlantic, the mean position of the polar front in January is:	from Florida to south west England	from Newfoundland to the north of Scotland	from Florida to the north of Scotland	from Newfoundland to south west England
119.	When air from an air mass moves to a lower latitude, it can be expected that:	Surface layer air will become warmer, the RH will rise and the air will become unstable.	Surface layer air will become colder, the RH will rise and the air will become more stable.	Surface layer air will become warmer, the RH will fall and the air will become unstable.	Surface layer air will become warmer, the RH will fall and the air will become more stable.
120.	It can be expected that the depth of the Friction Layer over the UK will be:	Greater in Polar Maritime air due to the instability and moderate wind.	Greater in Tropical Maritime air due to the warm temperature.	Greater in Polar Continental air due to the very low temperatures.	Greater in Tropical Continental air due to the relatively high temperatures in winter.
121.	The airmasses involved in the development of a Polar Front Depression are:	Polar Maritime and Polar Continental.	Tropical Maritime and Polar Continental.	Tropical Continental and Polar Maritime.	Polar Maritime and Tropical Maritime.
122.	When a cold front passes a Station in the British Isles:	The wind veers and the dewpoint falls.	The wind backs and the dewpoint falls.	The wind veers and the dewpoint rises.	The wind backs and the dewpoint rises.
123.	With a cold occlusion:	The air ahead of the warm front is colder than the air	The warm sector remains on the surface.	The cloud type is predominately layer with a	There is a risk of CB embedded in NS.

		behind the cold front.		wide precipitation band.	
124.	A warm occlusion occurs when:	warm air is forcing cool air over cold air	cold air is forcing cool air over warm air	cool air is forcing warm air over cold air	cool air is forcing cold air aloft
125.	A thermal depression is likely to form:	over the Iberian peninsular during the summer	in the lee of the Alps over Northern Italy in winter	in association with a marked trough of low pressure over the USA	on the trailing edge of a warm sector mid latitude depression
126.	In comparison with a primary depression a secondary depression is:	Always more active.	Sometimes more active.	Never more active.	Unlikely to produce gale force winds.
127.	A Secondary Depression would form in association with:	A Polar Depression.	A Col.	A Summer Thermal Depression over the Mediterranean or Caspian Sea.	A Polar Front Low.
128.	Which of the following are Thermal Depressions:	Tropical revolving storms, polar air depressions, tornadoes.	The equatorial trough, monsoon lows, some depressions over the central and eastern Mediterranean sea in summer.	The equatorial trough, polar air depressions, monsoon lows, orographic lows.	The lows forming over flat land in summer, polar air depressions, tropical revolving storms, some of the lows which form over inland seas in winter
129.	Flying conditions in a Secondary low pressure system are:	Always more severe than in a Primary low.	Sometimes more severe than in a Primary low.	Less severe than in a Primary low.	Relatively calm.
130.	Northern hemisphere summers tend to be:	warmer than the southern hemisphere and winters are warmer too.	colder than the southern hemisphere due to the smaller amount of solar radiation.	colder than the southern hemisphere because of the large land masses.	warmer than the southern hemisphere and the winters are colder.
131.	Statistical pressure values tend to be:	on average parallel to the lines of latitude.	on average parallel to the lines of latitude in the southern hemisphere and much more variable in the northern hemisphere.	much lower in winter in the northern hemisphere than in the southern hemisphere.	higher over the oceans in winter.
132.	Trade winds:	blow towards the sub tropical anticyclones.	are caused by lifting over the heat equator and the subsequent air movements from the sub tropical anticyclones.	only blow in the winter months.	blow from the equatorial low pressure systems throughout the year.
133.	Trade winds in the southern hemisphere are:	southeasterly.	southeast at first becoming southwest.	in opposition to the monsoons.	usually from the northeast.
134.	The large change in the direction of trade	local pressure differences.	an excess of air at height in	the change in geostrophic	the cyclostrophic force in

	winds is caused by:			association with the Hadley cells.	force when crossing the geographic equator.	the equatorial regions.
135.	Monsoons are seasonal winds which:	develop due to the high pressure over continents in winter and the subsequent low pressure which develops over the same areas in summer.	are never in combination with trade winds.	blow only in the southeast Asia region.	are from the southeasterly direction over the Indian sub continent in summer.
136.	The upper winds tend to be westerly outside the tropics because:	the rotation of the earth is west to east.	the thermal winds are westerly on average.	surface winds are nearly always westerly.	jet streams are usually westerly.
137.	Jet stream main locations are:	in the warm air some 400 nm ahead of a warm or cold front and near the subtropical highs.	in the warm air some 400 nm ahead of a warm front and some 200 nm behind a cold front and near the sub tropical highs.	only in association with the polar front.	in association with the polar front and with mountain waves.
138.	Near the equator upper winds tend to be:	easterly.	westerly.	at speeds greater than 60 kt.	calm.
139.	The Polar Front is:	the boundary surface between polar continental and tropical continental air.	near the poles.	only apparent over the Atlantic ocean.	the region where warm sector depressions develop.
140.	Dust storms and haze are most common:	in association with the sub tropical anticyclones over land.	with the Haboobs in winter.	in unstable air with low pressure.	in temperate latitudes.
141.	The most notorious advection fogs occur:	over southwest UK.	over the sea in the region of Newfoundland and the Kamchatka peninsula.	over Europe with high pressure to the north.	over central North America in autumn and winter.
142.	When would a rotor cloud be ahead of a Cb ?	Mature stage	Cumulus stage	Dissipating stage	Initial stage
143.	What cloud does hail fall from ?	Cb	Ns	Cu	Ci
144.	Where are you most likely to find moderate to severe icing ?	In upper levels of Cumulonimbus Capillatus	Nimbostratus	Stratus	Cirrus
145.	Height of the tropopause at 50°N	11 km	16 km	05 km	20 km
146.	A characteristic of a stable air mass	Lapse rate of 1oC / 100 m	Rising air slows down and dissipates	Lapse rate of 0.3°C/100m	Good visibility and shower
147.	Which conditions lead to mountain waves ?	Unstable moist air, speeds <5 kts across the ridge	Stable air, speed, >20 kts across the ridge	Unstable air, speed >20 kts across the ridge	Stable air, speed >30kts, parallel to the ridge
148.	Where is the coldest air in a cold occlusion?	Behind the cold front	At the junction of the occlusion	In front of the occlusion	Behind the warm front
149.	Where is the largest chance of squalls	1n front of an active cold front	Above the occlusion along the	Behind the cold front	Above the occlusion along

	occurring ?		cold front		the warm front
150.	Flying conditions in Ci cloud and horizontal visibility	Less than 500m vis, light/mod clear icing	Greater than 1000m vis, light/mod rime ice	Less then 500m vis, no icing	Greater than 1000m vi s, no icing
151.	What is the composition of Ci cloud ?	Super cooled water droplets	Ice crystals	Water droplets	Smoke particles
152.	What cloud types are classified as medium cloud ?	Ns + Sc	Ac + As	Cb + St	Ci+Cs
153.	Isolated TS occur mostly due to	Warm frontal uplift	Cold front uplift	Insulation	Convection
154.	What type of cloud is associated with drizzle ?	St	Cb	Ci	Ac
155.	Fair weather cumulus gives an indication of	Poor visibility	Thunderstorms	Turbulence	Smooth flying below
156.	What cloud type are you least likely to get icing from ?	Ci	Cu	St	Ns
157.	Why is clear ice such a problem ?	Translucent and forms along leading edges	Not translucent and forms along leading edges	Very heavy and can affect aircraft controls and surfaces	Forms in clear air
158.	A steep pressure gradient is characterized by	Isobars close together, strengthened wind	Isobars far apart, decreased wind	Isobars close together, temperature increasing	Isobars far apart, temperature decreasing
159.	What type of icing requires immediate diversion ?	Light	Moderate	Severe	extreme
160.	Sublimation is :	Solid to vapour	Vapour to liquid	Liquid to vapour	Liquid to solid
161.	What is the coldest time of the day ?	1 hr before sunrise	30 min before sunrise	at exact moment of sunrise	within 30 min of sunrise
162.	Which of the following would lead to the formation of Steaming fog :	cold air over warm sea	warm air over cold sea	cold sea near coast	warm air over land
163.	When is diurnal variation a maximum ?	Clear sky, still wind	Clear sky, strong wind	OVC, still	OVC, windy
164.	Dew point is defined as:	The lowest temperature at which evaporation will occur for a given pressure	The lowest temperature to which air must be cooled in order to reduce the relative humidity	The temperature below which the change of state for a given volume of air will result in absorption of latent heat	The temperature to which moist air must be cooled to reach saturation
165.	From which of the following can the stability of the atmosphere be determined ?	surface pressure	surface temperature	DALR	ELR
166.	How do you define convection ?	Horizontal movement of air	Vertical movement of air	Same as advection	Same as conduction
167.	When is the latest time radiation fog is most likely ?	Just after dawn	Late afternoon	Midday	Midnight

168.	What is the tropopause ?	The layer between the troposphere and mesosphere	The boundary between the troposphere and stratosphere	Where temperature increases with height	Upper boundary to C.A.T.
169.	Where do you find the majority of the air within atmosphere ?	Troposphere	Stratosphere	Tropopause	Mesosphere
170.	What are Lenticularis clouds a possible indication of ?	Mountain waves	Instability	Developing Cu and Cb	Horizontal wind shear in the upper atmosphere
171.	When are cyclones most likely ?	Mid Winter	Late Autumn	Late Summer	Late Spring
172.	In what cloud is icing and turbulence most severe ?	Cb	Ns	Sc	Ci
173.	What will snow most likely fall from ?	Ns	Ci	Cs	Ac
174.	Rime ice is caused by:	Large Super cooled water droplets	Small Super cooled water droplets	Slow freezing of water droplets onto the wing	Rapid re-freezing of large water droplets
175.	What is the most severe form of icing ?	Dry Ice	Hoar frost	Clear ice	Rime ice
176.	Cold occlusion is:	Cold air undercutting warm air	Warm air overriding cold air	Air ahead of the warm front undercutting the air behind the cold front	Air behind the cold front undercutting the air in front of the warm front
177.	Warm occlusion is:	Warm air undercutting cold air	Warm air overriding cold air	Air ahead of the warm front over riding the air behind the cold front	Air behind the cold front over riding the air in front of the warm front
178.	Duration of a microburst:	5 mins, 5 km	20 mins, 5 km	15 mins, 25 km	45 mins, 25 km
179.	A METAR for Paris gave the surface wind at 260/20 at 2000ft is most likely to be:	260/15	210/30	290/40	175/15
180.	A pilot experiences severe turbulence and icing. A competent met. man would issue:	SPECI	METAR	TEMPO	SIGMET
181.	Which of these would cause your true altitude to decrease with a constant indicated altitude ?	Cold/Low	Hot/Low	Cold/High	Hot/High
182.	A large pressure gradient is shown by:	Closely spaced isobars - low temperature	Distant spaced isobars - high temperature	Close spaced isobars - strong winds	Close spaced isobars - light winds
183.	Squall lines are encountered:	In an air mass with cold air properties	Ahead of a cold front	Behind a stationary front	At an occluded front
184.	Microbursts:	Only affect tropical areas	Average lifespan 30mins	Typical horizontal dimensions 1 - 3km	Always associated with CB clouds
185.	7Which of the following are described as precipitation ?	TS	SQ	SA	DZ
186.	Clouds classified as low level are	500 - 1000ft	1000 - 2000ft	the surface - 6500ft	100 - 200ft

	considered to have a base height of:				
187.	Contours on a weather chart indicate:	Heights of pressure levels	Distance between pressure levels	Thickness between pressure levels	Height of ground
188.	Sub tropical highs are found:	5°-15°	25° – 35°	40° - 60°	Between the Polar and Ferrell cells
189.	In a Tropical Downpour the visibility is sometimes reduced to:	1000m	500m	200m	less than 100m
190.	QNH is defined as:	The pressure at MSL obtained using the standard atmosphere	The pressure at MSL obtained using the actual conditions	QFE reduced to MSL using the actual conditions	QFE reduced to MSL using the standard atmosphere
191.	Landing at an airfield with QNH set the pressure altimeter reads:	Zero feet on landing only if ISA conditions prevail	Zero	The elevation of the airfield if ISA conditions prevail	The elevation of the airfield
192.	The fastest moving thunderstorms are:	Orographic	Thermal	Frontal	Lifting
193.	Where are the fastest winds in a Tropical Revolving Storm ?	Near the eye	In the wall of cloud surrounding the eye	To the right of the track	To the right of the track in Hurricanes and Cyclones
194.	What type of cloud is usually found at high level ?	St	Ac	Cc	Ns
195.	The environmental lapse rate in the real atmosphere:	Has a fixed value of 2°C / 1000 ft	Has a fixed value of 0.65°C / 100 Mtrs	Varies with time	Has a fixed value of 1 °C / 100 Mtrs
196.	The QNH is 1030Hpa and at the Transition Level you set the SPS. What happens to your indicated altitude?	Drops by 510ft	Rises by 510ft	Rises	Drops
197.	What is the movement of air relating to a ridge?	Descending and diverging	Ascending and diverging	Descending and converging	Ascending and converging
198.	Altostratus is	A low level cloud	A medium level cloud	A high level cloud	A heap type cloud
199.	Which of the following would give you the worst airframe icing ?	GR	SN	FZFG	Modearte Freezing Rain
200.	Small super cooled water droplets hit the aerofoil, will it	Freeze on impact giving clear ice	Partially freezing and running back giving clear ice	Freeze on impact giving rime ice	Partially freezing and running back giving a cloudy rime ice
201.	What causes wind ?	Difference in pressure	Rotation of the earth	Frontal systems	Difference in temperature
202.	What is the approximate height of the 250hPa level ?	30,000ft	32,000ft	39,000ft	34,000ft
203.	Several aircraft report clear air turbulence in a certain area en route	ATC should issue a storm warning	ATC should close the specified area	A competent ATC should issue a SPECI	A competent ATC should issue a SIGMET
204.	Where are icing conditions on a runway specified ?	TAF	METAR	SIGMET	GAFFO

205.	Where are icing conditions on route specified ?	TAF and METAR	METAR and SIGMET	SWC (sig. weather. chart) and SIGMET	SPECI and TREND
206.	What is subsidence ?	Horizontal motion of air	Vertical down draught of air	Vertical up draught of air	Adiabatic cooling
207.	Moderate turbulence can be expected in	Alto-cumulus Lenticularis	Cirrocumulus	Nimbostratus	Stratus
208.	RVR is	Measured using ceilometers along the runway	Displayed in TAF=s and METAR=s	Usually greater than met visibility	Given when the met visibility is below 2000m
209.	Relative humidity increases in	Warmer air compared to colder air	Warm air at a constant vapour pressure	Cold air at a constant vapour pressure	Colder air compared to warmer air
210.	Super cooled water droplets are found in	Clouds only	Clouds, fog and precipitation	Precipitation and clouds	Precipitation
211.	What would be reflected to radar ?	Fog	Hail	Cloud	Mist
212.	What is the relationship between the 5000ft wind and the surface wind in the southern hemisphere:-	Surface winds are veered from the 5000ft and have the same speed .	Surface winds are backed from the 5000ft and have a slower speed.	Surface winds are veered from the 5000ft and have a slower speed.	Surface winds are backed from the 5000ft and have a faster speed.
213.	Turbulence is worst in a Jet stream	In the core	Along the axis of the core to the right	Along the axis of the core to the left	Between the boundaries of the cold and warm air
214.	TEMPO TS indicates	TS that will last for the entire period indicated	TS that will last for a max of 1 hr in each instance	TS that will last for at least 30 mins	TS that will last for less than 30 mins
215.	What is a microburst?	Air descending at high speed, the air is colder than the surrounding air	Air is descending at high speed; the air is warmer than the surrounding air	A small Tropical Revolving Storm	A small depression with high wind speeds
216.	Clear ice is most likely to form	-10°C to -17°C	-30°C to -40°C	-20°C to -30°C	-40°C to -60°C
217.	Where do you get freezing rain ?	Rain hitting the ground and freezing on impact	Rain falling into warmer air	Rain falling from an inversion into an area below 0°C	Rain falling into colder air and freezing into pellets
218.	Which of the following is worst for icing ?	-2°C to -15°C	-15°C to -20°C	-25°C to -30°C	Near freezing level
219.	Which of the following will give the greatest difference between temperature and dew point ?	Dry air	Moist air	Cold air	Warm air
220.	CB cloud in summer contains	Water droplets	Ice crystals	Water droplets, ice crystals and super cooled water droplets	Water droplets and ice crystals
221.	In a METAR/TAF what is V V ?	RVR in metres	Vertical visibility	Horizontal visibility in metres	Vertical visibility in feet
222.	In an METAR the cloud height is above	MSL	Aerodrome level	The measuring station	The highest point within SKm
223.	Aerodrome at MSL, QNH is QFF is	Greater than 1022	Less than 1022	Same as QNH	Cannot tell without

					temperature information
224.	What is the technical term for an increase in temperature with altitude ?	Inversion	Advection	Adiabatic	Subsidence
225.	What units are used to measure vertical wind shear ?	m/sec	kts	kts/100ft	kms/100ft
226.	How is QFE determined from QNH ?	Using the temperature of the airfield and the elevation of the airfield	Using the temperature	Using the elevation	Using the temperature at MSL and the elevation of the airfield
227.	Which cloud would produce showers ?	NS	AS	CS	CB
228.	What clears radiation fog ?	Temperature drop	Wind speed decreases	Wind speed increases	Mixing
229.	On a surface weather chart, isobars are lines of	QNH	QFE	QFF	QNE
230.	What is the effect of a strong low level inversion ?	Good visibility	Calm conditions	Turbulence	Unstable conditions
231.	A cold pool over land in summer would give rise to:	Clear skies	Low stratus with intermittent rain	A potentially very unstable atmosphere	Extensive industrial haze
232.	Upper level winds are forecast in significant weather charts as:	True/knots	Magnetic/knots	Magnetic/km/h	True/km/h2
233.	METAR winds are meaned over the............. period immediately preceding the time of observation.	10 minute	30 minute	1 hour	1 minute
234.	Main TAF's at large aerodromes are valid for approximately:	1 hour	2 hours	6 hours	24 hours
235.	When would you mostly likely get fair weather Cu ?	15 Hrs	12 Hrs	17 Hrs	07 Hrs
236.	RVR is defined as being	The maximum distance an observer on the runway can see marker boards by day and runway lights by night	The maximum distance a pilot in the threshold area at 15ft above the runway can see marker boards by day or runway lights by night, when looking in the direction of take-off or landing.	The maximum distance in metres a pilot 15ft above the touchdown zone can see marker boards by day and runway lights by night in the direction of take-off	The distance it would be possible to see an observer 15ft above the runway when standing in the direction of take-off or landing.
237.	What type of cloud extends into another level ?	As	Ace	Ns	Ci
238.	Ceilometers measure	RVR	Cloud height	Met Vis	Turbulence
239.	In a METAR, the pressure group represents	QFE rounded up to the nearest	QFE rounded down to the	QNH rounded up to the	QNH rounded down to the

		hectopascal	nearest hectopascal	nearest hectopascal	nearest hectopascal
240.	Which of the following is true ? QNH is:	Always more than 1013.25 hPa	Always less than 1013.25 hPa	Never 1013.25 hPa	Can never be above or below 1013 hPa
241.	Radiation fog extends from the surface to:	5000ft	2000ft	10,000ft	800ft
242.	Low level inversions	Good vis at night	Good vis in the morning	Poor vis due to the lack of vertical moving air	Poor vis because of the lack of horizontal movement of air
243.	A forecast trend	Aerodrome and valid for 9 hours	Route and valid for 24 hours	SPECI and valid for 2 hours	Landing and valid for 2 hour
244.	QNH is Aerodrome is 200m AMSL. What is QFF ?	Higher than 1030	Lower than 1030	Same	Not enough info
245.	Where are down draughts predominant in a thunderstorm ?	Mature	Dissipating	Initial	Cumulus
246.	What is FG V V 100 ?	RVR less than 100m	RVR less than 100ft	Vertical visibility is 100m	Vertical visibility is 100ft
247.	Where would an anemometer be placed ?	close to station, 2m above ground	on the roof of the station	10 m above aerodrome elevation on a mast	next to the runway, 1 m above ground
248.	90km/hr wind in kts is:	70	60	50	30
249.	An aircraft is stationary on the ground. With the passage of an active cold front its altimeter will show:	An increase then a decrease	Will fluctuate 50ft	A decrease then an increase	Remain constant
250.	What is reported as precipitation ?	FZFG	FG	TS	SN
251.	At FL60 what pressure chart would you use ?	700 hPa	850 hPa	800 hPa	900 hPa
252.	In association with CB in temperate latitudes, at about what levels can hail be anticipated ?	Ground to FL 100	Ground to FL200	Cloud base to FL200	Ground to FL450
253.	Moderate Turbulence	Changes in altitude and/or attitude occur but the aircraft remains in positive control at all times	Slight erratic changes in altitude and/or attitude	Large, abrupt changes in altitude and/or attitude. Aircraft maybe momentarily out of control	Slight, rapid and somewhat rhythmic bumpiness.
254.	ATIS reports:	Aerodrome operational and meteorological information	Met only	Operational only	None of the above
255.	Secondary depressions move	Around the primary in a cyclonic fashion	Around the primary in an anticyclonic fashion	Eastwards	Westwards
256.	Where does a thunderstorms gain its energy from ?	Energy gained directly from the sun	Latent heat from water in oceans	The very fast winds	The very low pressures inside the storm

257.	What is the height and temperature of Tropopause ?	8km and -40°C at Equator	16km and -75°C at Equator	16km and -40°C at Pole	8 km and -75°C at Pole
258.	What is the Easterly wave ?	a wave of weather traveling east-west	a wave of weather traveling west-east	a wave of weather traveling north-south	a wave of weather traveling south-north
259.	What is the base of alto cumulus in summer ?	0-1500Ft	1500-7000 Ft	7000-15000 Ft	7000-16500 Ft
260.	Which air mass has the coldest temperature ?	AM	PM	PC	TM
261.	What happens to an aircraft altimeter on the ground once a cold front has passed ?	increases	decreases	increases then decreases	remains the same
262.	What happens to an aircrafts altimeter on the ground at the approach of a cold front?	increases then decreases	decreases then increases	remains the same	increases
263.	When would a SIGMET be issued for subsonic flights	Thunderstorms and fog	Severe Mountain Waves	Solar Flare activity	Moderate turbulence
264.	Trade winds are most prominent or strongest	Upper troposphere over sea	Lower troposphere over ocean	Lower troposphere over land	Upper troposphere over land
265.	With all other things being equal with a high and a low having constantly spaced circular isobars. Where is the wind the fastest.	Anticyclonic	Cyclonic	Where the isobars are closest together	Wherever the PGF is greatest.
266.	Foehn winds are	Warm katabatic	Cold katabatic	Warm descending winds	Warm anabatic
267.	Lack of cloud at low level in a stationary high is due to:	instability	rising air	sinking air	divergence at high level
268.	An easterly wave is a:	wave in a trade wind belt, moving from east to west with severe convective activity in rear of its trough	small scale wave disturbance in the tropics, moving from east to west with severe convective activity ahead of its trough	wave-like disturbance in the monsoon regime of indices moving from east to west with severe convective activity ahead of its trough	disturbance in the higher levels associated with the equatorial easterly jets, moving from east to west, with severe convective activity in rear of its trough
269.	What is the most common freezing precipitation ?	Freezing pellets	Freezing rain and freezing drizzle	Freezing graupel	Freezing hail and freezing snow
270.	Which of the following is an example of a Foehn wind ?	Bora	Harmattan	Chinook	Ghibli
271.	From which of the following clouds are you least likely to get precipitation in summer ?	CS/NS	CS/AS	CB/CU	CU/ST
272.	Where do you find information on ICING and CAT ?	300mb chart	700mb chart	Sig. WX chart	Analysis chart

273.	What happens to the temperature of a saturated air mass when forced to descend?	it heats up more than dry because of expansion	it heats up less than dry because of evaporation	it heats up more than dry because of sublimation	it heats up less than dry because of latent heat released during condensation
274.	When is pressure altitude equal to true altitude ?	In standard conditions	When surface pressure is 1013.25mb	When the temperature is standard	When the indicated altitude is equal to the pressure altitude
275.	What is the relationship between QFE and QNH at an airport 50ft below MSL ?	QFE = QNH	QFE < QNH	QFE > QNH	There is no clear relationship
276.	Where would a pilot find information about the presence of a jet stream ?	On an Upper Air chart	On a Significant Weather chart	On a Surface Analysis chart	On a Wind/Temperature chart
277.	Thunderstorms will occur on a warm front:	When air is cold moist and cools quicker than SALR	When air is warm moist and cools quicker than SALR	When air is cold moist and cools slower than SALR	When air is warm moist and cools slower than DALR
278.	What is the effect of a mountain valley wind ?	it blows down a mountain to a valley at night	it blows down a mountain to a valley during the day	it blows from a valley up a mountain by day	it blows from a valley up a mountain at night
279.	In still air a lapse rate of 1.2°C/100m refers to:	DALR	SALR	ELR	ALR
280.	The DALR is	Variable with time	Fixed	Variable with latitude	Variable with temperature
281.	Which frontal or occlusion system is the fastest moving ?	Warm front	Cold front	Cold occlusion	Warm occlusion
282.	What weather might you expect behind a fast moving cold front ?	8 oktas of layered cloud	Scattered ST	Isolated CB's and showers	Continuous rain
283.	How would an unstable atmosphere likely reduce the visibility ?	By mist	By haze	By rain and or snow	Low stratus
284.	What is a SPECI ?	A forecast valid for 3 hours	A report produced when significant changes have occurred	A forecast and valid for 6 hours	A landing forecast
285.	Thermal lows usually develop	Over the sea in summer.	Over the sea in winter.	Over the land in summer.	Over the land in winter.
286.	TAF's are usually valid for	For the period indicated in the TAF itself	For 18 hours	For 24 hours.	For 8 hours.
287.	Wind at altitude is usually given as ....in	1	Magnetic	True	Magnetic
288.	In a high pressure systems	The winds tend to be stronger in the morning.	The angle between the isobars and the wind direction is greatest in the afternoon.	The winds tend to be stronger at night.	The winds tend to be stronger in early afternoon.
289.	Over flat dry land what would cause cloud ?	Orographic uplift.	Convective uplift during the day.	Release of latent heat.	Advection.

290.	The letters NC used at the end of a SIGMET, mean:	No cloud	No change	No cumulus	Not clear
291.	When would the strongest convection occur ?	Land in summer	Land in winter	Sea in summer	Sea in winter
292.	Freezing rain is most likely from	Warm front in summer	Cold front in summer	Warm front in winter	cold front in winter
293.	With regard to RVR and Met vis	Met vis is usually less than RVR	Met vis is usually greater than RVR	RVR is usually less than met vis	Met vis and RVR are usually the same
294.	When are thermal lows most likely	Land in summer	Land in winter	Sea in summer	Sea in winter
295.	What is the main feature of the initial stage of a thunderstorm	Downdrafts	up currents	rain	rotor cloud
296.	What is haze ?	poor visibility due to drizzle	poor visibility due to rain	poor visibility due to dust or sand	all of the above
297.	What is a trend forecast	An aerodrome forecast valid for 9 hours	A routine report	A landing forecast appended to a METAR/SPECI valid for 2 hours.	A route forecast, valid for 24 hours.
298.	How does clear ice form ?	SWD's speading on impact	Ice pellets shattering on impact	Frost on the wing	Water vapour freezing on the aircraft surface.
299.	Where do you find squall lines	Where there are thunderstorms	Ahead of a fast moving cold front	Foggy areas	Regions of snow
300.	A Fohn wind occurs	On the windward side caused by surface heating	On the leeward side, because the condensation level is higher	On the windward side, caused by surface cooling and wind flow reversal	On the leeward side, caused by precipitation
301.	At what height is half the mass of the atmosphere	5km	11 km	8km	3km
302.	What is true about moderate to severe airframe icing	It will occur in clear sky conditions	Always occurs in AS cloud	May occur in the uppermost levels of CB capillatus formation	Most likely in NS
303.	What causes convection in a low pressure system	Height	Latitude	Centripetal Force	Friction
304.	Which of these statements is true about Hurricanes?	They are 400-500m wide.	They pick up in force when they hit land .	The air inside is warmer than outside and can reach up to tropopause.	They are never found more than 25° latitude.
305.	If you fly with left drift in the Northern Hemisphere, what is happening to your true altitude?	Increases	Decreases	Stays the same	Cannot tell
306.	When is diurnal variation a maximum ?	Clear sky, still wind	Clear sky, strong wind	OVC, still	OVC, windy

307.	Above a stable layer in the lower troposphere in an old high pressure system is called:	radiation inversion	subsidence inversion	frontal inversion	terrestrial inversion
308.	Why does air cool as it rises ?	It expands	It contracts	The air is colder at higher latitudes	The air is colder at higher altitudes
309.	Which of the following gives conditionally unstable conditions?	1°C/100m	0.65°C/100m	0.49°C/ 100m	None of the above
310.	What affects how much water vapour the air can hold ?	RH	Temperature	Dew point	Pressure
311.	The figures "9999" in a meteorological forecast or report means -	8 km	10 km or more	5 km	12 km
312.	Where is the ozone layer ?	ionosphere	Stratosphere	Tropopause	Troposphere
313.	Landing at an airfield with QNH set the pressure altimeter reads:	Zero feet on landing only if ISA conditions prevail	Zero	The elevation of the airfield if ISA conditions prevail	The elevation of the airfield
314.	What happens to an aircrafts altimeters on the ground ones a cold front has passed ?	Increases	Decreases	Increases then decreases	Remain the same
315.	An early morning fog over the sea lasts all day. As the land heats up, the sea fog -	May drift over the land	will always disperse	will always remain over the sea	will always remain over the land.
316.	When is pressure altitude equal to true altitude ?	In standard conditions	When surface pressure is 1013.25mb	When the temperature is standard	When the indicated altitude is equal to the pressure altitude
317.	Bangladesh Meteorological Department has :	3 Radar	4 Radar	5 Radar	2 Radar station
318.	Radar is used for :-	Wind direction and speed	Sea surface temperature	Detection cyclone and cloud movement	Detection of soil moisture
319.	Sigmet is issued by Meteorological watch office for every :	3 hours interval	4 hours interval	2 hours interval	5 hours interval
320.	5, 6 and 7 octas cloud is express as :	OVC	BKN	SCT	FEW
321.	Synoptic surface observation are generally taken every :	2 hours interval	3 hours interval	4 hours interval	6 hours interval
322.	For a short range weather forecast which observation is more effective :	Satellite observation	Radar observation	Radio sonde observation	Ship observation
323.	Which seasons is called transition period :-	NE monsoon	SW monsoon	Pre-monsoon	Retreating monsoon
324.	Which type of Nor'wester reaches upto Meghna estuary through Rajshahi Division :-	Type-A	Type-B	Type-C	Type-D

325.	In Horse latitude weather is :-	a)Cold	Clear and fresh	Rain and thunderstorm	Squally wind
326.	Most of the active western disturbance that comes towards Bangladesh are :-	Primary	Secondary	Tertiary	None of the above
327.	Western disturbance do not precisely travel west to east but their normal track is slightly :-	N/NE-ward	South-SE ward	E/NE-wards	North to South ward
328.	On set date of SW monsoon in Bangladesh is :-	1st week of July	1st week of June	1st week of October	1st week of May
329.	Pre-monsoon season in Bangladesh is :-	June to September	March to May	December to February	October to November
330.	A mamatus sky often gives warning for the formation of :-	a)Cyclone	Tornado	Monsoon	Western disturbance
331.	Tornado often travels in a :-	Straight way	Horizontal way	Erratic and skipping way	North to south way
332.	The SW monsoon reach up to :-	Delhi	China	Persian gulf	Baluchistan.
333.	Before issuing forecast a Meteorological officer follows :-	Only TAF	TAF and METAR	All charts, Satellite data, significant weather chart etc	None of the above
334.	Bangladesh is Charecterize by High Pressure during:	Pre-monsoon season	NE monsoon season	SW monsoon season	Retreating monsoon season
335.	When would a SIGMET be issued be for subsonic flights.	Thunderstorms and fog.	Severe mountain waves .	Solar Flare activity.	Moderate turbulence .
336.	The average eye of a tropical cyclone is :	30-40 miles	15-20 miles	10-15 miles	40-50 miles
337.	Ascent of balloon at night by observing :	A torch light	A lantern attached to the balloon	A charger light	A electric bulb
338.	Which is likely to cause aquaplaning ?	+RA	SA	FG	DS
339.	With the approach of a warm front ?	QNH/QFE decreases	QNH/QFE increase	QNH decrease and QFE increases	QNH increase and QFE decreases
340.	Solar radiation heats the atmosphere by-	Heating the air directly	Heating the surface, this there heats the air in the atmosphere	Heating the water vapour in the atmosphere directly	Heating the water vapour directly unless there are clouds present.
341.	For carburetor ice to form , the outside air must be -	Bellow freezing	Moist	Dry	Cold and moist
342.	What happens to the stability of the atmosphere in an inversion ?	Absolutely stable	Unstable	Conditionally stable	Conditionally unstable
343.	If ice forms over the static vent of an aeroplane and blocks it during the climb , the air speed indicator will read	Zero	Too fast	Too slow	Correctly

344.	A man is flying East to West in the Northern Hemisphere. What is happening to the altitude ?	Flying into a head wind will decrease altitude	If the wind is from the south, he will gain altitude	If the wind is from the north, he will gain altitude	Tail wind will increase altitude
345.	Weather formation for certain aerodromes is available in recorded form on the VOLMET service -	Through the post	By radio	Via the public telephone network.	From ATC prior to flight.
346.	Where do you find squall lines ?	Where there is a thunderstorms	Ahead of a fast moving clod front	Foggy areas	Regions of snow
347.	With the approach of a cold front, temp. will	Decrease	Remain the same	Increase	Decrease then increase
348.	In association with CB in temperature latitude at about what levels can hail be anticipated	Ground to FL 100	Ground to FL 200	Cloud base FL 200	Ground to FL 450
349.	A weather forecast is -------	an observer	a prediction	a landing forecast	a trend forecast

CPL Composite (Navigation)

SL	question	option_1	option_2	option_3	option_4
1.	The maximum range at which an aircraft at FL250 can receive transmissions from a VHF R/T station at 300 ft is:	200 nm	219 nm	175 nm	198 nm
2.	The greatest range for a surface wave will be at a frequency of:	198 KHz	121.5 MHz	2,182 KHz	4,300 MHz
3.	At a fixed frequency if the level of ionisation increases, then:	The dead space will increase because of the increase in critical angle.	The dead space will decrease because of a decrease in critical angle	The dead space will increase because of a decrease in the critical angle.	The dead space will decrease because of an increase in the critical angle.
4.	The reduction in the power available in a radio wave as the distance from a transmitter increases is known as:	Dissipation	Diffraction	Attenuation	Refraction
5.	An advantage of FM when compared with AM is:	Less susceptible to static interference	Smaller bandwidth	Easier to demodulate (ie extract information)	More suitable for use at lower frequencies
6.	Which of the following frequencies is likely to experience the most severe static interference?	121.5 MHz	500 KHz	4,300 MHz	5,500 KHz
7.	The phenomenon of coastal refraction which affects the accuracy of ADF bearings:	is most marked at night.	can be minimised by using beacons situated well inland.	can be minimised by taking bearings where the signal crosses the coastline at right angles.	is most marked one hour before to one hour after sunrise and sunset.
8.	ADF Quadrantal Error is caused by:	static build up on the airframe and St. Elmo's Fire.	the aircraft's major electrical axis, the fuselage, reflecting and re-radiating the incoming NDB transmissions.	station interference and/or night effect.	NDB signals speeding up and bending as they cross from a land to water propagation path.
9.	The overall accuracy of ADF bearings by day within the Promulgated Range/Designated Operational Coverage (DOC) is:	± 3°	± 5°	± 6°	± 10°
10.	The Protection Ratio of 3:1 that is provided within the Promulgated range/Designated Operational Coverage of an NDB by day cannot be guaranteed at night because of:	Long range skywave interference from other transmitters.	Skywave signals from the NDB to which you are tuned.	The increased skip distance that occurs at night.	The possibility of sporadic E returns occurring at night.
11.	In an ADF system, night effect is most pronounced:	during long winter nights.	when the aircraft is at low altitude.	when the aircraft is at high altitude.	at dusk and dawn.

12.	When the induced signals from the loop and the sense antenna are combined in an ADF receiver, the resultant polar diagram is:	a limacon	a cardioid	figure of eight shaped	circular
13.	The principal propagation path employed in an NDB/ADF system is:	skywave	surface wave	direct wave	ducted wave
14.	The ADF of an aircraft on a heading of 189°(T) will experience the greatest effect due to Quadrantal Error if the NDB bears:	234°(T)	279°(T)	225°(T)	145°(T)
15.	The Designated Operational Coverage quoted for VOR beacons in the COMM section of the Air Pilot:	Is only applicable by day.	Guarantees a Protection Ratio of at least 3 to 1 by day and night.	Defines the airspace within which an aircraft is assured of protection from interference from other VORs on the same channel.	Is determined by the type of surface over which the signal will have to travel.
16.	Concerning conventional and Doppler VORs (DVOR), which of the following is correct?	There is no way of knowing from the instrumentation display which type is being used.	The DVOR will always have a "D" in the ident.	The DVOR has a higher pitch ident than the standard VOR.	The conventional VOR has less site error.
17.	A VOR beacon ceases to transmit its normal identification which is substituted by'TST'. This means that:	The beacon may be used providing that extreme caution is used.	The beacon is undergoing maintenance or calibration and should not be used.	This is a temporary short range transmission and will have approximately half its normal range.	The beacon is under test and pilots using it should report its accuracy to air traffic control.
18.	An aircraft is required to intercept and home to a VOR along the 064 Radial. The OBS should be set to:	064 to get correct needle sense and a TO indication.	244 to get correct needle sense and a TO indication.	064 to get correct needle sense and a FROM indication.	244 to get correct needle sense and a FROM indication.
19.	The type of emission radiated by a VOR beacon is:	A double channel VHF carrier with one channel being amplitude modulated and the second channel being frequency modulated.	A single channel VHF carrier wave amplitude modulated at 30 Hz with a sub carrier being frequency modulated at 30 Hz.	A VHF carrier wave with a 90 Hz frequency modulation and a 150 Hz amplitude modulation.	A VHF pulse modulated emission with a pulse repetition frequency of 30 pps.
20.	An aircraft wishes to track towards a VOR along the 274 radial. If variation is 10° W what should be set on the OBS ?	274	264	94	84
21.	A VOR receiver in an aircraft measures the phase difference from a DVOR as 220°. Which radial is the aircraft on?	140	40	320	220
22.	The VOR indications on an RMI whose deviation is not zero:	are magnetic.	are compass.	are relative.	must have deviation applied before being use

23.	The coverage of an ILS localiser extends to either side of the on course line out to a range of nm.	10° 35	35° 10	35° 17	25° 25
24.	The minimum angle at which a false glide path is likely to be encountered is:	6 degrees	5.35 degrees	normal glide slope times 1.75	normal glide slope times 0.70
25.	In elevation the upper and lower limits of an ILS glide path transmitter having a 3.0 degree glide slope are:	0.35° 0.70°	3.00° at least 6°	5.25° 1.35°	10.0° 35.0°
26.	A category 2 ILS installation :	provides accurate guidance down to 50' above the horizontal plane containing the runway threshold.	has a steep glide path, normally 7.5°.	provides accurate guidance down to the runway and along the runway after landing.	has a false glide path that is exactly twice the true glide path angle.
27.	The outer marker of an ILS installation has a visual identification of:	alternating dots and dashes on a blue light.	continuous dots at a rate of 3 per second, blue light.	continuous dashes at a rate of 2 per second, amber light.	continuous dashes at a rate of 2 per second, blue light.
28.	The specified maximum safe fly up indication on a 5 dot CDI is:	half full scale needle deflection above the centre line.	2.5 dots fly up.	just before full scale deflection.	1.3 dots fly up.
29.	An aircraft is attempting to use an ILS approach outside the coverage sectors of an ICAO standard system:	From the glideslope needle the captain may be receiving false course and reverse sense indications and from the localiser needle intermittent and incorrect indications.	The aircraft's receiver is not detecting any transmissions and the ILS needle OFF flags are visible.	From the localiser needle the captain may be receiving false course and intermittent indications and from the glideslope needle reverse sense and incorrect indications.	From the localiser needle the captain may be receiving false course and reverse sense indications and from the glideslope needle intermittent and incorrect indications.
30.	If the PRF of a primary radar is 500 pulses per second, the maximum range will be:	324 nm	300 nm	162 nm	600 nm
31.	If the PRI of a radar is 2100 microseconds, the maximum range of the radar is:	170 nm	315 nm	340 nm	630 nm
32.	To improve the resolution of a radar display requires:	a narrow pulse width and a narrow beam width	a high frequency and a large reflector	a wide beamwidth and a wide pulse width	a low frequency and a narrow pulse width
33.	An advantage of a phased array (slotted antenna) is:	better resolution	less power required	reduced sidelobes and clutter	all of the above
34.	The factor which limits the minimum detection range of a radar is:	pulse repetition interval	transmitter power	pulse width	pulse repetition frequency
35.	A primary radar has a pulse repetition frequency of 275 pulses per second. The time interval between the leading edges of	3.64 milliseconds.	36.4 milliseconds.	3.64 microseconds.	36.4 microseconds.

	successive pulses is:				
36.	When flying a Precision Approach Radar, vertical displacement is based upon:	Regional QNH	QFE	QFF	Airfield QNH
37.	The frequency band and rate of scan of Airfield Surface Movement radars are:	SHF; 60RPM	SHF; 200RPM	EHF; 100RPM	EHF; I0RPM
38.	When carrying out a precision radar approach, talkdown normally ceases atnm from touchdown:	0.5 nm	2 nm	3 nm	5 nm
39.	An airborne weather radar is required to detect targets up to a maximum range of 200 nm. Ignoring pulse length and flyback in the CRT calculate the maximum PRR.	405 pps	810 pps	1500 pps	750 pps
40.	Airborne Weather Radar is an example of radar operating on a frequency of in the band.	primary 8800 MHz SHF	secondary 9.375 MHz UHF	secondary 9375 MHz SHF	primary 9375 MHz SHF
41.	A false indication of water may be given by the Airborne Weather Radar display when:	flying over land with the Land/Sea switch in the Sea position.	flying over mountainous terrain.	there is cloud and precipitation between the aircraft and a cloud target.	attempting to use the mapping beam for mapping in excess of 50 nm.
42.	Airborne weather radar operates on a frequency of:	8800 MHz because gives the best returns from all types of precipitation	13300 MHz	9375 MHz because it gives the best returns from rainfall associated with Cb	9.375 GHz because this frequency is best for detecting aircraft in flight.
43.	An Airborne Weather Radar system uses a frequency of 9 GHz because:	it has a short wavelength so producing higher frequency returns.	the short wavelength allows signals to be reflected from cloud water droplets of all sizes.	the wavelength is such that reflections are obtained only from the larger water droplets.	the frequency penetrates clouds quite easily enabling good mapping of ground features in the mapping mode.
44.	The antenna of an Airborne Weather Radar is stabilised:	in pitch, roll and yaw.	in pitch and roll.	in pitch and roll whether the stabilisation is on or off.	in pitch and roll but only when 0° tilt has been selecte
45.	The special SSR codes are as follows: emergency , radio failure, unlawful interference with the conduct of the flight	7700; 7600; 7500.	7500; 7700; 7600;.	7600; 7500; 7700.	7500; 7600; 7700.
46.	Secondary Surveillance Radar is a form of radar with type emissions operating in the band.	primary pulse SHF	primary pulse UHF	secondary FM SHF	secondary pulse UHF
47.	Secondary radars require:	a target which will respond to the interrogation, and this	a target which will respond to the interrogation, and this	a target which will respond to the interrogation, and	a quiescent target.

		target will always be an aircraft.	target will always be ground based.	this target may be either an aircraft or a ground based transponder.	
48.	A VOR/DME share the same first two letters of their respective identifiers; the last identifying letter of the DME is a Z. This means that:	they are co-located.	they are more than 600m apart but serve the same location.	they are widely separated and do not serve the same location.	they are a maximum distance of 30m apart.
49.	The range indicated by DME is considered to be accurate to within:	3% of range	1.25 % of range	0.5 nm	+/-0.25 nm to +/-1.25% of range
50.	When a DME transponder becomes saturated:	it reverts to standby.	it increases the number of pulse pairs to meet the demand.	it increases the receiver threshold to remove weaker signals.	it goes into a selective response mode of operation.
51.	For a DME and a VOR to be said to be associated it is necessary for:	the DME to transmit on the same VHF frequency as the VOR.	the aerial separation not to exceed 100 feet in a TMA or 2000 feet outside a TMA.	the aerial separation not to exceed 100 metres in a TMA or 2000m outside a TMA.	both beacons to have the same first two letters for their ident' but the last letter of the DME to be a `Z'.
52.	The accuracy associated with DME is:	+ or - 3% of range, or 0.5nm, whichever is greater	+ or - 1.25% of range	+ or - 3% of range	+/-0.25 nm to +/-1.25% of range
53.	For a VOR and a DME beacon to be said to be associated the aerial separation must not exceed in a terminal area andoutside a terminal area.	100 m 2000 m	50 feet200 feet	30m 600m	50m 200 m
54.	DME is a …… radar operating in the …… band and usage …… in order to obtain range information. The correct words to complete the above statement are:	primary SHF CW signals	secondary UHF twin pulses	secondary SHF "jittered pulses"	primary UHF pulse pairs
55.	The receiver of airborne DME equipment is able to "lock on" to its own "reply pulses" because:	each aircraft has its own unique transmitter frequency and the receiver only accepts reply pulses having this frequency.	the reply pulses from the ground transmitter have the same frequency as the incoming interrogation pulses from the aircraft.	the aircraft receiver only accepts reply pulses which have the same time interval between successive pulses as the pulses being transmitted by its own transmitter .	the aircraft receiver only accepts reply pulses which arrive at a constant time interval.
56.	DME and VOR are "frequency paired" because:	the same receiver can be used for both aids.	the VOR transmitter is easily converted to the required DIVE frequency.	"cockpit workload" is reduced.	both ground transmitter aerials can be placed on the same site if require

57.	The NAVSTAR/ GPS control segment comprises:	the space segment, the user segment and the ground segment	a ground segment and the INMARSAT geostationary satellites	a master control station, a back-up control station and five monitoring stations	a master control station, a back-up control station, five monitoring stations and the INMARSAT geostationary satellites
58.	The model of the earth used for NAVSTAR/GPS is:	WGS90	PZ90	WGS84	PZ84
59.	The NAVSTAR/GPS operational constellation comprises ...... satellites	12	21	24	30
60.	The frequency available to non-authorised users of NAVSTAR/GPS is:	1227.6 MHz	1575.42 MHz	1602 MHz	1246 MHz
61.	If a receiver has to download the almanac, the time to do this will be:	2.5 minutes	12.5 minutes	25 minutes	15 minutes
62.	The most accurate satellite fixing information will be obtained from:	NAVSTAR/GPS & GLONASS	TRANSIT & NAVSTAR/GPS	COSPAS/SARSAT & GLONASS	NAVSTAR/GPS & COSPAS/SARSAT
63.	The availability of two frequencies in GNSS:	removes SV ephemeris and clock errors	reduces propagation errors	reduces errors caused by GDOP	removes receiver clock errors
64.	The NAVSTAR/GPS reference system is:	A geo-centred 3D Cartesian co-ordinate system fixed with reference to the sun	A geo-centred 3D Cartesian co-ordinate system fixed with reference to the prime meridian, equator and pole	A geo-centred 3D Cartesian co-ordinate system fixed with reference to space	A geo-centred 3D system based on latitude, longitude and altitude
65.	The navigation and system data message is transmitted through the:	50 Hz modulation	The C/A and P PRN codes	The C/A code	The P code
66.	When using GNSS to carry out a non-precision approach the MDA will be determined using:	barometric altitude	GPS altitude	Radio altimeter height	Either barometric or radio altimeter altitude
67.	Which of the following statements concerning NAVSTAR/GPS time is correct?	satellite time is the same as UTC	the satellite runs its own time based on seconds and weeks which is independent of UTC	the satellite runs its own time based on seconds and weeks which is correlated with UTC	satellite time is based on sidereal time
68.	The bearing signal transmitted from a Conventional VOR beacon is:	produced by a 30Hz amplitude modulated signal, a Limacon, which rotates at 30revs./sec.	produced by a 30Hz amplitude modulated signal, a Cardiod, which rotates at 30revs./sec.	produced by a 30Hz frequency modulated signal rotating at 30revs./se	produced by a 30Hz amplitude modulated signal, a Limacon, which rotates anti - clockwise at 30revs./sec.
69.	An aircraft DME receiver does not lock on to signals reflected from the ground because:	DME uses the UHF band.	DME transmits twin pulses.	the pulse recurrence rates are varied.	the reflections are not at the receiver frequency.

No.	Question	A	B	C	D
70.	The middle marker of an ILS system has an audible code which is:	alternating dots and dashes at 400Hz.	alternating dots and dashes at 1300Hz.	alternating dots and dashes at 3000Hz.	high pitch dots.
71.	Accurate glidepath coverage in elevation is provided for ILS installations between:	an angle of 1.35° to an angle of 5.25° above the horizontal, for a 3° glidepath.	an angle of 1.85° to an angle of 4.75° above the horizontal, for a 3° glidepath.	an angle of 2.15° to an angle of 5.75° above the horizontal, for a 3° glidepath.	an angle of 1.00° to an angle of 6.0° above the horizontal, for a 3° glidepath.
72.	SELCAL functional check must be made:	only on the ground before departure of a flight into an area where SELCAL is available	on initial contact and when entering an area where SELCAL is available.	with the local ATCC before take-off.	when crossing the coast inboun
73.	When using an Airborne Weather Radar in the weather mode the strongest returns on the screen indicate:	areas where high concentrations of large water droplets exist.	areas of moderate or severe turbulence.	areas of probable windshear.	areas of thunderstorm activity.
74.	Operational Performance Category 2 is awith a -lower thanand a RVR	precision instrument approach and landing; MDH; 60m (200ft); not less than 300m.	precision instrument approach and landing; DH; 60m (200ft) but not lower than 30m (100ft); not less than 300m.	precision instrument approach and landing; DH; 30m (100ft) or no DH; not less than 200m.	ILS approach and landing; DH; 60m (200ft) but not lower than 30m (100ft); not less than 300m.
75.	In a conventional VOR the reference signal is ...... and the variable signal is	FM AM	AM FM	FM FM	AM AM
76.	The correct SSR code to indicate radio failure is:	7700	7600	2000	7500
77.	A primary radar has a PRF of 500 pulses per second The maximum theoretical range, ignoring all other factors, is:	300 nm	162 nm	600 nm	324 nm
78.	VLF surface waves achieve greater range than LF surface waves because:	VLF diffraction is greater and attenuation is less.	VLF diffraction and attenuation are less.	VLF diffraction is less and attenuation is greater.	VLF diffraction and attenuation are greater.
79.	When using airborne weather radar to obtain a fix from a ground feature, the pencil beam is used in preference to the mapping beam:	because the wider beam gives better definition of ground features.	the angle of tilt is restricted in the mapping mode.	at ranges over about 50 nm because greater power can be concentrated in the beam.	because it overcomes the problems of "hill" shadows.
80.	A class B true bearing from a ground VDF station isa ...... with an accuracy of	QTE +/-5°	QDM +/-5°	QUJ +/-5°	QDR +/-5°
81.	Category 2 ILS installation provides accurate guidance to:	100 ft on the threshold QFE.	50 ft above aerodrome elevation.	200 ft above aerodrome elevation.	50 ft above the plane containing the runway threshold
82.	An apparent increase in transmitted frequency, proportional to the velocity of	the receiver moving towards the transmitter.	the transmitter moving away from the receiver.	the transmitter moving towards the receiver.	the transmitter and the receiver moving away from

	the transmitter, is caused by:				eachother.
83.	Which of the following statements is correct ?	Primary radar uses echoes from a reflecting object, whereas secondary radar uses responses from a transponder beacon.	Primary radar gives range not bearing, of a reflecting object.	Secondary always measures the bearing of a reflecting object more accurately than primary radar.	Only secondary radar can be carried on an aircraft.
84.	If an aircraft's groundspeed reduces by 10kt whilst it is flying an ILS approach with a 3° glidepath then its rate of descent:	should increase by 50 ft/min.	should decrease by 25 ft/min.	should decrease by 50 ft/min.	does not need to be adjusted as the speed change is too small to have any significant effect.
85.	A pilot hears the morse TST from a navigational aid. This means that:	The station is on test and may be used with caution.	The facility is transmitting for test purposes only and must not be used.	The station accuracy has just been checked and it has passed the test	The aid may be used with caution and the accuracy reported to ATC
86.	AWR uses the frequency of 9.375GHz because it:	produces the best returns from precipitation, and enables narrow, efficient beams to be formed for accurate target discrimination.	produces the best returns from precipitation, and enables narrow, efficient beams to be formed for accurate target discrimination and mapping beyond 60nm.	produces the best returns from large water droplets and wet hail, indicates areas of clear air turbulence, and enables narrow, efficient beams to be formed for accurate target discrimination.	produces the best returns from large water droplets and wet hail, and enables narrow, efficient beams to be formed for accurate target discrimination.
87.	A VOR station which continues to transmit bearings but ceases to transmit its identification:	can be used only by day.	can be used only in VMC.	has developed an error exceeding 1° at the transmitter and must not be used.	can be used provided the frequency selected is checked as correct.
88.	The emission designator for a particular aeronautical radio facility which utilises both FM and AM could be:	A9W	NONA2A	A8W	A3E
89.	A typical ILS localiser frequency is:	329.30Mhz	110.30Mhz	110.45Mhz	75.OOMhz
90.	The ILS MIDDLE MARKER has the following flight-deck aural and visual characteristics:IDENT' RATE LIGHT	Alternate dot/dash 3/sec Amber	Alternate dot/dash 2/sec Blue	Dashes 3/sec Amber	Alternate dot/dash 3/sec Blue
91.	The maximum safe fly-up indication on an ILS approach when using a meter with a 5 dot display is:	0.35°	2.5dots	1.3dots	0.7°
92.	Which of the following would be the normal fix for a Basic RNAV (B-RNAV) equipment:	DME/DME	VOR/DME	VOR/NDB	VOR/VOR

93.	Which following statement is true?	Primary radar uses echoes from a reflecting object whereas secondary radar uses responses from a transponder.	Primary radar can only find the range of a reflecting object.	Secondary radar always measures the bearing of a reflecting object more accurately than a primary.	Only secondary, not primary, radar can be carried in an aircraft.
94.	The Airfield Surface Movement Indicator radar has a.............. rotation rate compared to that of standard Surveillance radars and also has a.............. beam.	similar, wider.	higher, narrower.	slower, narrower.	similar, narrower.
95.	The areas of greatest turbulence associated with storm clouds are indicated on the colour screen of an Airborne Weather Radar by:	Cyclic Contouring which emphases the high intensity rainfall areas by alternately flashing them red and black.	the thinnest lines of colour which indicate steep rainfall gradients.	the black holes produced by the Iso-echo Contour facility.	selecting the Sensitivity Time Control function.
96.	The Global Positioning System frequency available for use by civil operators is:	1227.6MHz	1575.42MHz	2227.5MHz	1783.74MHz
97.	The principle of operation of MLS is:	lobe comparison of scanning beams.	phase comparison of directional beams.	time referenced scanning beams.	frequency comparison of reference beams.
98.	When would VHF direction finding be used for a position fix?	When an aircraft declares an emergency on any frequency.	When first talking to a FIR on crossing an international boundary.	When joining controlled airspace from uncontrolled airspace.	When declaring an emergency on 121.500 MHz.
99.	What equipment does an aircraft need when carrying out a VHF direction finding letdown?	VHF radio	VOR	VOR/DME	None
100.	Which of the following is an advantage of a VHF direction finding let down?	no equipment required in the aircraft	no special equipment required in the aircraft or on the ground	only a VHF radio is needed in the aircraft	it is pilot interpreted, so ATC is not required
101.	What is the maximum range at which a VHF direction finding station at 325 ft can provide a service to an aircraft at FL080 ?	134 nm	107 nm	91 nm	114 nm
102.	Which of the following statements regarding VHF Direction Finding (VDF) is most accurate.	it is simple and only requires a VHF radio on the ground	it is simple and requires a VHF radio and DF equipment in the aircraft	it is simple requiring only VHF radios on the ground and in the aircraft	it uses line of sight propagation
103.	What is the wavelength corresponding to a frequency of 375 KHz?	8 m	80 m	800 m	8000 m
104.	The accuracy of ADF within the Designated Operational Coverage (DOC) by day is:	+/-1°	+/-2°	+/-5°	+/-10°
105.	Which of the following is likely to have the greatest effect on the accuracy of ADF	interference from other NDB's particularly by day	interference between aircraft aerials	interference from other NDB's, particularly at night	frequency drift at the ground station

	bearings?				
106.	Which of the following are all errors associated with ADF?	selective availability, coastal refraction, night effect	night effect, quadrantal error, lane slip	mountain effect, station interference, static interference	selective availability, coastal refraction, quadrantal error
107.	What action must be taken to receive a bearing from an ADF?	BFO on	Select the loop position	Both the loop and sense aerials must receive the signal	Select the LOOP position
108.	When is coastal error at its worst for an aircraft at low level?	beacon inland at an acute angle to the coast	beacon inland at 90° to the coast	beacon close to the coast at an acute angle to the coast	beacon close to the coast at 90° to the coast
109.	Which of the following is the most significant error in ADF?	quadrantal error	coastal refraction	precipitation static	static from Cb
110.	Which of the following may cause inaccuracies in ADF bearings?	static interference, height effect, lack of failure warning	station interference, mountain effect, selective availability	coastal refraction, slant range, night effect	lack of failure warning, station interference, static interference
111.	The principle used to measure VOR bearings is:	phase comparison	switched cardioids	difference in depth of modulation	pulse technique
112.	When converting VOR and ADF bearings to true, the variation at the ...... should be used for VOR and at the ...... for ADF.	aircraft, aircraft	aircraft, station	station, aircraft	station, station
113.	In a conventional VOR the reference signal and the variable signal have a 30 Hz modulation. The variable signal modulation is produced by:	adding 30 Hz to the transmitted signal	a 30 Hz rotation producing a 30 Hz modulation	varying the amplitude up and down at +/-30 Hz	using Doppler techniques to produce a 30 Hz amplitude modulation
114.	If the VOR accuracy has a limit of 1°, what is the maximum cross track error at 200 nm?	3.0 nm	2.5 nm	2.0 nm	3.5 nm
115.	What is the maximum distance apart a VOR and TACAN can be located and have the same identification?	2000 m	60 m	600 m	6 m
116.	The maximum range an aircraft at FL370 can receive transmissions from a VOR/DME at 800 ft is:	275 nm	200 nm	243 nm	220 nm
117.	When tracking a VOR radial inbound the aircraft would fly:	a constant track	a great circle track	a rhumb line track	a constant heading
118.	Which of the following is a valid frequency (MHz) for a VOR?	107.75	109.9	118.35	112.2
119.	Using a VOR beyond the limits of the DOC may result in:	loss of signal due to line of sight limitations	interference from other VOR's operating on the same	skywave contamination of the VOR signal	scalloping errors

			frequency		
120.	When identifying a co-located VOR/DME the following signals are heard in the Morse code every 30 seconds:	4 identifications in the same tone	4 identifications with the DME at a higher tone	4 identifications with the DME at a lower tone	no DME identification, but if the VOR identification is present and a range is indicated then this shows that both are serviceable
121.	What is the maximum range a transmission from a VOR beacon at 169 ft can be received by an aircraft at FL012	60 nm	80 nm	120 nm	220 nm
122.	When tracking the 090 radial outbound from a VOR, the track flown is:	a straight line	a rhumb line	a great circle	a constant true heading
123.	On which radial from a VOR at 61N025E (VAR 13°E) is an aircraft at 59N025E (VAR 20°E)?	160	347	193	167
124.	What is the minimum height an aircraft must be to receive signals from a VOR at 196 ftamsl at a range of 175 nm?	26000 ft	16000 ft	24000 ft	20000 ft
125.	For a conventional VOR a phase difference of 090° would be achieved by flying ...... from the beacon:	west	north	east	south
126.	The quoted accuracy of VOR is valid:	at all times	by day only	at all times except night	at all times except dawn and dusk
127.	Which of the following provides distance information?	DME	VOR	ADF	VDF
128.	Which of the following would give the best indication of speed?	a VOR on the flight plan route	a VOR off the flight plan route	a DME on the flight plan route	a DME off the flight plan route
129.	What happens when a DME in the search mode fails to achieve lock-on?	it stays in the search mode, but reduces to 60 pulse pairs per second (ppps) after 100 seconds	it stays in the search mode, but reduces to 60 ppps after 15000 pulse pairs	it stays in the search mode at 150 ppps	it alternates between search and memory modes every 10 seconds
130.	The most accurate measurement of speed by DME for an aircraft at 30000 ft will be when the aircraft is:	tracking towards the beacon at 10 nm	overhead the beacon	tracking away from the beacon at 100 nm	passing abeam the beacon at 5 nm
131.	A DME beacon will become saturated when more than about ...... aircraft are interrogating the transponder.	10	50	100	200
132.	The DME in an aircraft, cruising at FL210,	the beacon is saturated	the aircraft is beyond the	the aircraft is beyond line of	the aircraft signal is too

	fails to achieve lock on a DME at msl at a range of 210 nm. The reason for this is:		maximum usable range for DME	sight range	weak at that range to trigger a response
133.	The aircraft DME receiver accepts replies to its own transmissions but rejects replies to other aircraft transmissions because:	the PRF of the interrogations is unique to each aircraft	the pulse pairs from each aircraft have a unique amplitude modulation	the interrogation frequencies are 63 MHz different for each aircraft	the interrogation and reply frequencies are separated by 63 MHz
134.	When an aircraft at FL360 is directly above a DME, at mean sea level, the range displayed will be:	6 nm	9 nm	0 nm	12 nm
135.	A DME frequency could be:	10 MHz	100 MHz	1000 MHz	10000 MHz
136.	An aircraft at FL360 is 10 nm plan range from a DME. The DME reading in the aircraft will be:	8 nm	11.7 nm	10 nm	13.6 nm
137.	A DME transceiver does not lock onto its own reflections because:	the PRF of the pulse pairs is j jittered	it uses MTI	the interrogation and reply frequencies differ	the reflections will all fall within the flyback period
138.	What information does military TACAN provide for civil aviation users?	magnetic bearing	DME	Nothing	DME and magnetic bearing
139.	The DME in an aircraft flying at FL430 shows a range of 15 nm from a beacon at an elevation of 167 ft. The plan range is:	13.5 nm	16.5 nm	15 nm	17.6 nm
140.	The DME counters are rotating continuously. This indicates that:	the DME is unserviceable	the DME is trying to lock onto range	the DME is trying to lock onto frequency	the DME is receiving no response from the ground station
141.	On a DME presentation the counters are continuously rotating. This indicates:	the DME is in the search mode	the DME is unserviceable	the DME is receiving no response from the transponder	The transponder is unserviceable
142.	An aircraft at FL200 is 220 nm from a DME at msl. The aircraft equipment fails to lock on to the DME. This is because:	DME is limited to 200 nm	The aircraft is too high to receive the signal	The aircraft is too low to receive the signal	The beacon is saturated
143.	On an ILS approach you receive more of the 90 Hz modulation than the 150 Hz modulation. The action you should take is:	fly left and up	fly left and down	fly right and up	fly right and down
144.	The errors of an ILS localiser (LLZ) beam are due to:	emission sidelobes	ground reflections	spurious signals from objects near the runway	interference from other systems operating on the same frequency
145.	The amplitude modulation of the ILS outer marker is .... and it illuminates the ...... light in the cockpit.	400 Hz, blue	1300 Hz, amber	400 Hz, amber	1300 Hz, blue

146.	The principle of operation of the ILS localiser transmitter is that it transmits two overlapping lobes on:	different frequencies with different phases	the same frequency with different phases	the same frequency with different amplitude modulations	different frequencies with different amplitude modulations
147.	The ILS glideslope transmitter generates false glidepaths because of:	ground returns from the vicinity of the transmitter	back scattering of the signals	multiple lobes in the radiation pattern	reflections from obstacles in the vicinity of the transmitter
148.	A category III ILS system provides accurate guidance down to:	the surface of the runway	less than 50 ft	less than 100 ft	less than 200 ft
149.	A HSI compass rose is stuck on 200°. When the aircraft is lined up on the centreline of the ILS localiser for runway 25, the localiser needle will be:	left of the centre	centred	right of the centre	centred with the fail flag showing
150.	The coverage of the ILS glideslope with respect to the localisercentreline is:	+/-10° to 8 nm	+/-10° to 25 nm	+/-8° to 10 nm	+/-35° to 17 nm
151.	The sequence of marker colours when flying an ILS approach is:	white, blue, amber	blue, white, amber	blue, amber, white	amber, blue, white
152.	The sensitive area of an ILS is the area aircraft may not enter when:	ILS operations are in progress	category 1 ILS operations are in progress	category II/III ILS operations are in progress	the ILS is undergoing calibration
153.	The audio frequency of the outer marker is:	3000 Hz	400 Hz	1300 Hz	1000 Hz
154.	An aircraft is flying downwind outside the coverage of the ILS. The CDI indications will be:	unreliable in azimuth and elevation	reliable in azimuth, unreliable in elevation	no indications will be shown	reliable in azimuth and elevation
155.	The frequency band of the ILS glidepath is:	UHF	VHF	SHF	VLF
156.	The coverage of MLS is ...... either side of the centreline to a distance of	40°, 40 nm	40° 20 nm	20°, 20 nm	20°, 40 nm
157.	Distance on MLS is measured by:	measuring the time taken for the primary radar pulse to travel from the MLS transmitter to the aircraft receiver	measuring the time taken for the secondary radar pulse to travel from the MLS transmitter to the aircraft receiver	phase comparison between the azimuth and elevation beams	co-located DME
158.	Which of the following is an advantage of MLS?	can be used in inhospitable terrain	uses the same aircraft equipment as ILS	has a selective access ability	is not affected by heavy precipitation
159.	The frequency band of MLS is:	UHF	VHF	SHF	VLF
160.	Primary radar operates on the principle of	transponder interrogation	pulse technique	phase comparison	continuous wave emission
161.	The definition of a radar display will be best with:	narrow beamwidth and narrow pulsewidth	narrow beamwidth and wide pulsewidth	wide beamwidth and narrow pulsewidth	wide beamwidth and wide pulsewidth

162.	The main advantage of a continuous wave radar over a pulsed radar is:	more complex equipment but better resolution and accuracy	removes the minimum range restriction	smaller more compact equipment	permits measurement of Doppler in addition to improved range and bearing
163.	To double the range of a primary radar, the power must be increased by a factor of	2	4	8	16
164.	In a primary pulsed radar the ability to discriminate in azimuth is a factor of:	Pulse width	Beamwidth	Pulse recurrence rate	Rate of rotation
165.	What does pulse recurrence rate refer to?	the number of cycles per second	the number of pulses per second	the ratio of pulse width to pulse repetition period	the delay known as flyback or dead time
166.	The maximum PRF required for a range of 50 nm is:	300 pulses per second (pps)	600 pps	1620 pps	3280 pps
167.	The best radar for measuring very short ranges is:	a continuous wave primary radar	a pulsed secondary radar	a pulsed primary radar	a continuous wave secondary radar
168.	Which is the most suitable radar for measuring short ranges?	millimetric pulse	continuous wave primary	centimetric pulse	continuous wave secondary
169.	The main advantage of a slotted scanner is:	reduces sidelobes and directs more energy into the main beam	removes the need for azimuth slaving	sidelobe suppression	can produce simultaneous map and weather information
170.	The maximum unambiguous (theoretical) range for a PRF of 1200 pps is:	134 nm	180 nm	67 nm	360 nm
171.	The PRF of a radar is 450 pps. If the speed of light is 300000 kps, what is the maximum range of the radar?	150 km	333 km	666 km	1326 kin
172.	The best picture on a primary radar will be obtained using:	low frequency, narrow beam	short wavelength, narrow beam	high frequency, wide beam	long wavelength, wide beam
173.	Which of the following is a primary radar system?	SSR	DME	GPS	AWR
174.	ATC area surveillance radars will normally operate to a maximum range o£	100 nm	200 nm	300 rim	400 nm
175.	An area surveillance radar is most likely to use a frequency of.	330 MHz	600 MHz	10 GHz	15 GHz
176.	Short range aerodrome radars will have ...... wavelengths.	millimetric	centimetric	decimetric	metric
177.	The ASM Roperates in the ...... band, the antenna rotates at ...... rpm can ...... distinguish between aircraft types.	UHF, 120, sometimes	SHF, 60, always	UHF, 120, never	SHF, 60, sometimes
178.	The frequency band of most ATC radars and	UHF	SHF	VHF	EHF

	weather radars is:				
179.	The airborne weather radar (AWR) cannot detect:	snow	moderate rain	dry hail	wet hail
180.	The use of the AWR on the ground is:	not permitted	permitted provided reduced power is reduced	permitted provided special precautions are taken to safeguard personnel and equipment	only permitted to assist movement in low visibility conditions
181.	Which type of cloud does the AWR detect?	Cirro-cumulus	Alto-stratus	Cumulus	Stratus
182.	The AWR uses the cosecant squared beam in the ...... mode.	WEA	CONT	MAP	MAN
183.	On an AWR colour display, the sequence of colours indicating increasing water droplet size is:	blue, green, red	green, yellow, red	black, amber, red	blue, amber, green
184.	The ISO-ECHO circuit is incorporated in the AWR:	to allow ground mapping	to alert pilots to the presence of cloud	to display areas of turbulence in cloud	to allow simultaneous mapping and cloud detection
185.	The main factors which affect whether an AWR will detect a cloud are:	the size of the water droplets and the diameter of the antenna reflector	the scanner rotation rate and the frequency/wavelength	the size of the water droplets and the wavelength/frequency	the size of the water droplets and the range of the cloud
186.	In an AWR with a colour CRT, areas of greatest turbulence are indicated by:	iso-echo areas coloured black	large areas of flashing red	iso-echo areas with no colour	most rapid change of colour
187.	As a storm intensifies, the colour sequence on the AWR display will change:	black, yellow, amber	green, yellow, red	blue, green, orange	green, yellow, amber
188.	The cosecant squared beam is used for mapping in the AWR because:	a greater range can be achieved	a wider beam is produced in azimuth to give a greater coverage	a larger area of ground is illuminated by the beam	it allows cloud detection to be effected whilst mapping
189.	On switching on the AWR a single line appears on the display. This means that:	the transmitter is unserviceable	the receiver is unserviceable	the CRT is not scanning	the antenna is not scanning
190.	Doppler navigation systems use to determine the aircraft groundspeed and drift.	DVOR	Phase comparison of signals from ground stations	Frequency shift in signals reflected from the ground	DME range measurement
191.	Why is the effect of returns from storms not a problem with SSR?	the frequency is too high	SSR does not use the echo principle	The PRF is jittered	By the use of MTI to remove stationary and slow moving returns
192.	The advantages of SSR mode S are:	improved resolution, TCAS	data link, reduced voice communications	TCAS, no RT communications	better resolution, selective interrogation
193.	The accuracy of SSR mode C altitude as	+/-25 ft	+/-50 ft	+/-75 ft	+/-100 ft

	displayed to the air traffic controller is:				
194.	Why is a secondary radar display free from weather clutter?	the frequencies are too low to detect water droplets	the frequencies are too high to detect water droplets	moving target indication is used to suppress the static generated by water droplets	the principle of the return of echoes is not used
195.	The availability of 4096 codes in SSR is applicable to mode:	A	C	S	All
196.	In NAVSTAR/GPS the PRN codes are used to:	reduce ionospheric and tropospheric errors	determine satellite range	eliminate satellite clock and ephemeris errors	remove receiver clock error
197.	The MDA for a non-precision approach using NAVSTAR/GPS is based on:	barometric altitude	radio altimeter	GPS altitude	GPS or barometric altitude
198.	The time required for a GNSS receiver to download the satellite almanac for the NAVSTAR/GPS is:	12.5 minutes	12 hours	30 seconds	15 minutes
199.	The effect of the ionosphere on NAVSTAR/GPS accuracy is:	only significant for satellites close to the horizon	minimized by averaging the signals	minimized by the receivers using a model of the ionosphere to correct the signals	negligible
200.	Concerning NAVSTAR/GPS orbits, which of the following statements is correct?	the inclination of the orbits is 55° with an orbital period of 12 hours	the inclination of the orbits is 55° with an orbital period of 24 hours	the orbits are geostationary to provide global coverage	the orbits are inclined at 65° with an orbital period of 11 hours 15 minutes
201.	NAVSTAR/GPS receiver clock error is removed by:	regular auto-synchronisation with the satellite clocks	adjusting the pseudo-ranges to determine the error	synchronisation with the satellite clocks on initialisation	having an appropriate atomic time standard within the receiver.
202.	The NAVSTAR/GPS segments are:	space, control, user	space, control, ground	space, control, air	space, ground, air
203.	The preferred GNSS receiver for airborne application is:	multiplex	multi-channel	sequential	fast multiplex
204.	The orbital height of geostationary satellites is:	19330 km	35800 km	10898 nm	10313 nm
205.	The best accuracy from satellite systems will be provided by:	NAVSTAR/GPS and TNSS transit	GLONASS and COSPAS/SARSAT	GLONASS and TNSS transit	NAVSTAR/GPS and GLONASS
206.	The azimuth and elevation of the satellites is:	determined by the satellite and transmitted to the receiver	determined by the receiver from the satellite almanac data	transmitted by the satellite as part of the almanac	determined by the receiver from the broadcast satellite X, Y, Z & T data
207.	The sky search carried out by a GNSS receiver:	is done prior to each fix	is done when the receiver position is in error	involves the receiver downloading the almanac from each satellite before	is the procedure carried out by the monitoring stations to check the accuracy of the

				determining which satellites are in view	satellite data
208.	The frequency band of the NAVSTAR/GPS L1 and L2 frequencies is:	VHF	UHF	EHF	SHF
209.	The number of satellites required to produce a 4D fix is:	3	4	5	6
210.	How many satellites are needed for a 2D fix?	4	2	3	5
211.	Using differential GNSS for a non-precision approach, the height reference is:	barometric	GNSS	radio	radio or GNSS
212.	The number of satellites required for a fully operational NAVSTAR/GPS is:	21	18	24	30
213.	`Unauthorised' civilian users of NAVSTAR/GPS can access:	the P and Y codes	the P code	the C/A and P codes	the C/A code
214.	When using GPS to fly airways, what is the vertical reference used?	barometric	GPS height	radio altitude	average of barometric and GPS
215.	The nav/system message from GLONASS and NAVSTAR/GPS is found in the band.	SHF	UHF	VHF	EHF
216.	What information can a GPS fix using four satellites give you?	latitude and longitude	latitude, longitude, altitude and time	latitude, longitude and altitude	latitude, longitude and time
217.	What are the basic elements transmitted by NAVSTAR/GPS satellites? i.offset of the satellite clock from GMT ii.ephemeris data iii.health data iv.ionospheric delays v.solar activity	i, ii, iii, iv, v	i, ii, iii	i, ii, iv	ii, iii, iv
218.	What is the purpose of the GPS control segment?	to control the use of the satellites by unauthorised users	to monitor the satellites in orbit	to maintain the satellites in orbit	degrade the accuracy of satellites for unauthorised users
219.	The distance measured between a satellite and a receiver is known as a pseudo-range because:	it is measured using pseudo-random codes	it includes receiver clock error	satellite and receiver are continually moving in relation to each other	it is measured against idealisedKeplerian orbits
220.	The task of the control segmentis to:	determine availability to users	monitor the SV ephemeris and clock	apply selective availability	all of the above
221.	An `all in view' satellite navigation receiver is one which:	monitors all 24 satellites	tracks selected satellites	selects and tracks all (in view) satellites and selects the best four	tracks the closest satellites

222.	Which GPS frequencies are available for commercial air transport?	1227.6 MHz only	1575.42 MHz only	1227.6 MHz and 1575.42 MHz	1227.6 MHz or 1575.42 MHz
223.	In GPS on which frequencies are both the C/A and P codes transmitted?	both frequencies	the higher frequency	neither frequency	the lower frequency
224.	The orbits of the NAVSTAR GPS satellites are inclined at:	55° to the earth's axis	55° to the plane of the equator	99° to the earth's axis	99° to the plane of the equator
225.	The function of the receiver in the GNSS user segment is to:	interrogate the satellites to determine range	track the satellites to calculate time	track the satellites to calculate range	determine position and assess the accuracy of that position
226.	Which of the following statements concerning differential GPS (DGPS) is true?	Local area DGPS gives the same improvement in accuracy regardless of distance from the station	DGPS removes SV ephemeris and clock errors and propagation errors	DGPS can improve the accuracy of SA affected position information.	Wide area DGPS accuracy improves the closer the aircraft is to a ground station
227.	The required accuracy of a precision RNAV (P-RNAV) system is:	0.25 nm standard deviation or better	0.5 nm standard deviation or better	1 nm standard deviation or better	1.5 nm standard deviation or better
228.	When using a two dot HSI, a deviation of one dot from the computed track represents:	2°	5°	5 nm	2 nm
229.	In the NAV and EXP NAV modes one dot on the EHSI represents:	2 nm	2°	5 nm	5°
230.	The phantom station in a 2D RNAV system may be generated by:	VOR/DME	Twin VOR	Twin DME	Any of the above
231.	The operation of a 2D RNAV system may be seriously downgraded:	because the computer cannot determine if the aircraft is within the DOC of the programmed facilities	because the computer cannot determine if the heading and altitude input are in error	because the pilot cannot verify the correct frequency has been selected	if the selected navigation facility is in excess of about 70 nm
232.	The FMS database can be:	altered by the pilots between the 28 day updates	read and altered by the pilots	only read by the pilots	altered by the pilots every 28 days
233.	The track line on an EFIS display indicates:	that a manual track has been selected	that a manual heading has been selected	the actual aircraft track over the ground, which will coincide with the aircraft heading when there is zero drift	the aircraft actual track which will coincide with the planned track when there is zero drift
234.	In an RNAV system which combination of external reference will give the most accurate position?	GPS/rho	Rho/theta	Rho/rho	GPS/theta
235.	Which EHSI modes cannot show AWR	FULL VOR/ILS/NAV and MAP	PLAN, CTR MAP and EXP	CTR MAP and PLAN	PLAN and FULL

	information?		VORJILS/NAV		VOR/ILS/NAV
236.	The NAVSTAR/GPS constellation comprises:	6 SVs each in 4 orbits	4 SVs each in 6 orbits	8 SVs each in 3 orbits	3 SVs each in 8 orbits
237.	Comparing the L1 and L2 signals helps with the reduction of which GNSS error?	tropospheric propagation	SV ephemeris	SV clock	Ionospheric propagation
238.	The normal maximum range for an ATC surveillance radar is:	50 nm	150 nm	250 nm	350 nm
239.	The cause of a RNAV giving erratic readings would be:	the aircraft is in the cone of confusion of the phantom station	the aircraft is beyond line of sight range of the phantom station	the aircraft is beyond line of sight range of the reference station	the aircraft is outside the DOC of the reference station
240.	Which type of radar could give an indication of the shape and sometimes the type of the aircraft?	area surveillance radar	SSR	AWR	Aerodrome surface movement radar
241.	What are the ground components of MLS?	separate azimuth and elevation antennae with DME	separate azimuth and elevation antennae with middle and outer markers	combined azimuth and elevation antennae with DME	combined azimuth and elevation antennae with middle and outer markers
242.	The accuracy required of a basic area navigation (B-RNAV) system is:	+/-5 nm on 90% of occasions	all the time	+/-5 nm on 95% of occasions	+/-5 nm on 75% of occasions
243.	What function does the course line computer perform?	Uses VOR/DME information to direct the aircraft to the facility	Uses VOR/DME information to direct the aircraft along a specified track	Converts VOR/DME information into HSI directions to maintain the planned track	Uses VOR/DME information to determine track and distance to a waypoint
244.	The emissions from a non-directional beacon (NDB) are:	a cardioid with a 30 Hz rotation rate	omni-directional	a phase-compared signal	a frequency modulated continuous wave (FMCW)
245.	How does night effect affect ADF?	Causes false bearings as the goniometer locks onto the skywave	Skywave interference which affects the null and is worst at dawn and dusk	Interference from other NDB's which is worst at dusk and when due east of the station	Phase shift in the received signal giving random bearing errors
246.	When flying under IFR using GPS and a multi-sensor system:	If there is a discrepancy between the GPS and multi-sensor positions, then the multisensor position must be regarded as suspect	The GPS must be operating and its information displayed	The multi-sensor system must be operating and its information displayed	Both systems must be operating but only the primary system information needs to be displayed
247.	What is the maximum PRF that allows detection of targets to a range of 50 km? (ignore any flyback time)	330 pulses per second (pps)	617 pps	3000 pps	1620 pps
248.	The almanac in the receiver:	determines selective availability	assigns the PRN codes to the satellites	is used to determine receiver clock error	is used to determine which satellites are above the

					horizon
249.	In a RNAV system the DME is tuned:	by what is selected on the pilots DME and hence is tuned manually	automatically by taking pilot's DME selection	by selecting DMEs to give suitable angle of cut to get a fix automatically	by automatically selecting the nearest suitable DME
250.	Quadrantal error in the ADF is caused by:	the metallic structure of the aircraft	generative voltages caused by the rotation of the engines	the electrical wiring running through the aircraft	multipath reception
251.	Which wavelength corresponds to a frequency of 5035 MHz?	5.96 mm	5.96 cm	59.6 cm	5.96 m
252.	The VDF term meaning `true bearing from the station' is:	QDM	QDR	QTE	QUJ
253.	ATC inform a pilot that they will provide aQGHservice. The pilot can expect:	headings and heights to fly to arrive overhead the aerodrome	radar vectors to position on final approach	QDM information to position overhead the aerodrome	Radar vectors to position overhead the aerodrome
254.	The ADF error which will cause the needle to `hunt' (ie oscillate around the correct bearing) is:	night effect	Cb static	station interference	coastal refraction
255.	The accuracy of ADF by day and excluding compass error is:	+/-1°	+/-2°	+/-5°	+/-10°
256.	A NDB has emission designator N0NA1A this will require the use of the BFO for:	tuning	identification	identification and monitoring	tuning, identification and monitoring
257.	The principle of operation of VOR is:	bearing by lobe comparison	bearing by frequency comparison	bearing by searchlight principle	bearing by phase comparison
258.	In a Doppler VOR (DVOR) the reference signal is the variphase signal is and the rotation is .	FM, AM, clockwise	AM, FM, clockwise	FM, AM, anti-clockwise	AM, FM, anti-clockwise
259.	A pilot intends to home to a VOR on the 147 radial. The setting he should put on the OBS and the CDI indications will be:	147, TO	147, FROM	327, FROM	327, TO
260.	Flying an ILS approach the equipment senses that the 90 Hz modulation predominates on both the localiser and the glidepath. The indications the pilot will see are:	fly left and fly up	fly left and fly down	fly right and fly up	fly right and fly down
261.	A category 2 ILS facility is required to provide guidance to:	below 50 ft	below 200 ft	the surface	below 100 ft
262.	The coverage of the approach azimuth and elevation of a MLS is:	+/-20° to 40 nm	+/-20° to 20 nm	+/-40° to 40 nm	+/-40° to 20 nm
263.	A full MLS system comprises a DME and:	4 elements multiplexing on 2	4 elements multiplexing on	2 elements using 2	2 elements multiplexing on

		frequencies	one frequency	frequencies	one frequency
264.	MLS has 200 channels available in the frequency band:	108 - 112 MHz	329 - 335 MHz	960 - 1215 MHz	5031 - 5090 MHz
265.	The type of radar which has no minimum range restriction is:	primary CW radar	primary pulsed radar	secondary CW radar	secondary pulsed radar
266.	The maximum theoretical range of aradar is determined by:	power	PW	beamwidth	PRF
267.	The time interval between the transmission of a pulse and receipt of the echo from a target is 925.5 microseconds. The range of the target is:	37.5 nm	75 nm	150 nm	300 nm
268.	An advantage of a slotted antenna (planar array) over a parabolic reflector are:	side lobes removed	360° scan without any rotation requirement	less power required	higher data rate possible
269.	The best resolution will be achieved on a radar display with:	high power output and large parabolic reflector	narrow beamwidth and narrow pulse width	low frequency and small parabolic reflector	wide beamwidth and large pulsewidth
270.	A radar transmitting on 600 MHz has a PRF of 300 pps and an aerial rotation rate of 5 rpm. This radar will be:	an area surveillance radar	an aerodrome surface movement radar	an aerodrome surveillance radar	a terminal area radar
271.	The AWR frequency is selected because it gives:	good returns from water droplets	good returns from turbulence	good penetration of cloud	good returns from water vapour
272.	On a colour AWR display, the heaviest precipitation will be displayed in:	amber	red	yellow	blue
273.	If the identification of a VOR is FKL and the paired DME identification is FKZ, then:	the transmitters are co-located	the beacons are between 600 m and 6 nm apart	the transmitters are within 600 m	the transmitters are in excess of 6 nm apart
274.	The frequency used by LORAN C is:	100 KHz	100 MHz	190 KHz	190 MHz
275.	The accuracy of LORAN C using surface wave fixing is:	20 nm at 1000 nm	1 nm at 2500 nm	1 nm at 1000 nm	20 nm at 2500 nm
276.	The coverage of LORAN C is:	in specified areas	in oceanic areas	over land only	in oceanic areas in the northern hemisphere
277.	The NAVSTAR/GPS operational constellation comprises:	21 satellites in 6 orbits	24 satellites in 6 orbits	24 satellites in 3 orbits	30 satellites in 6 orbits
278.	The model of the earth used for GPS is:	WGS90	PZ84	PZ90	WGS84
279.	The number of SV's required to produce a 3D fix is:	`3	4	5	6
280.	The purpose of the PRN codes in NAVSTAR/GPS is to:	identify the satellites	synchronise the receiver clocks with the SV clocks	pass navigation and system data to the receiver	all of the above

281.	The provision of RAIM requires a minimum of SVs.	3	4	5	6
282.	The best position on an aircraft for the GNSS aerial is:	in the cockpit as close as possible to the receiver	on the fuselage close to the centre of gravity	on the aircraft as far as possible from other aerials to reduce reflections	close to each wing tip to compensate for manoeuvre errors
283.	The NAVSTAR/GPS frequency available to non-authorised users is:	1227.6 MHz	1575.42 MHz	1215.0 MHz	1090.0 MHz
284.	A 2D RNAV system takes fixing inputs from:	co-located VOR/DME	twin DME	VOR and/or DME	Any of the above
285.	The accuracy required of a basic RNAV system is:	5 nm	5°	1 nm	1°
286.	The most accurate external reference position will be provided by:	VOR/DME	Twin DME	Twin VOR	Suitable combination of VOR and DME
287.	The accuracy required of a precision area navigation system is:	0.25 nm	2 nm	1 nm	0.5 nm
288.	A basic 2D RNAV system will determine tracking information from:	twin DME	VOR/DME	Twin VOR	Any of the above
289.	The sequence of displays accessed on initialisation is:	POS INIT, IDENT, RTE	IDENT, RTE, POS MIT	IDENT, POS INIT, RTE	POS MIT, RTE, IDENT
290.	The correct format for the input of position 50N 00527E to the CDU is:	5000.ON00527.OE	N50EO0527	N5000.OE00527.0	N5000E00527
291.	What is the approximate compression of the Earth?	0.03	0.0003	0.3	1/3000,
292.	A Graticule is the name given to:	A series of lines drawn on a chart	A series of Latitude and Longitude lines drawn on a chart or map	A selection of small circles as you get nearer to either pole	Both a & c are correct
293.	A great circle has its North vertex at 70N 130E. What is the position of its South vertex?	70N 050W	70S 050E	70S 050W	70N 050E
294.	A nautical mile is defined as:	The length of the arc of a great circle which subtends an angle of one minute in the centre of the Earth.	The length of the are of the Earth's equator which subtends an angle of one minute at the centre.	The length of 1/10,000th part of the average distance between the equator and either pole.	None of the above.
295.	Any Meridian Line is a:	Rhumb Line	Semi Great Circle	Rhumb Line and a semi Great Circle	All above are correct.
296.	A Rhumb Line cuts all meridians at the same angle. This gives:	The shortest distance between two points.	A line which could never be a great circle track	A line of constant direction	All above are correct.
297.	The shortest distance between to points on	Rhumb line	Great circle	Both of 'a' and 'b'	None of 'a' and 'c'

	the Earth is along the:				
298.	The value of variation:	is zero at the magnetic equator	has a maximum value of 180°	has a maximum value of 45° E or 45° W	cannot exceed 90°
299.	The value of magnetic variation on a chart changes with time. This is due to:	Movement of the magnetic poles, causing an increase	Increase in the magnetic field, causing an increase	Reduction in the magnetic field, causing a decrease	Movement of the magnetic poles, which can cause either an increase or a decrease
300.	If variation is West; then:	True North is West of Magnetic North	Compass North is West of Magnetic North	True North is East of Magnetic North	Magnetic North is West of Compass North
301.	Disadvantages of the latitude are longitude Reference system:	The possibility of confusion in areas closed to the equator and the prime meridian	The necessity of giving a 10 or 11 figure group to obtain positional accuracy of 1 min	One minute of latitude are one minute of longitude represent different distances on the earth, except of the equator	All the above.
302.	Departure is the distance between two given meridians, measured along a stated parallel and is expressed in:	Kilometer	Nautical mile	Statute mile	None of the above
303.	The formula used for calculation of departure:	Ch long (degree) X cos mean lat	Ch. long (mins) X cos mean lat	Ch. long (degree) X sin mean lat	Ch long (mins) X sin mean lat
304.	On a normal Mercator chart, rhumb lines are represented as:	Curves concave to the Equator	Curves convex to the Equator	Complex curves	Straight lines
305.	On a direct Mercator, Great Circles can be represented as:	Straight lines	Curves	Straight lines and curves	all of the above
306.	If the rhumb line track from Turin (45N 008E) to Khartoum (15N 032E) is 145°(T), what is the direction of the great circle track measured at Turin?	133°(T)	139°(T)	145°(T)	151°(T)
307.	Scale on a Lambert conformal chart is:	constant along a line of latitude	constant along a line of longitude	constant everywhere	correct at the parallel of origin
308.	The best chart made by lambert conformal Projection is between the latitudes:	12°S and 12° N	12° and 74° (either at N or at S)	74° and 90° (either at N or at S)	None of the above.
309.	A polar chart is the best between 90° and 74° and it is made by:	Gnomonic projection	Stereographic projection	Both of the above	None of the above.
310.	A Great Circle has a Northern Vertex of 50N 100W. The Southern Vertex is?	40S 100W	40S 080E	50S 100W	50S 080E
311.	How much is the polar diameter of the Earth different from the equatorial diameter?	less by 40 km	greater by 27 statute miles	less by 27 statute miles	greater by 27 nautical miles

312.	What is the shortest distance in kilometres between Cairo (30°17'N 030°10 E) and Durban (29°48' S 030°10'E) ?	3605	4146	4209	6676
313.	An aircraft at latitude 02°20'N tracks 180°(T) for 685 km. What is its latitude at the end of the flight' ?	03°50' S	02°50' S	02°10' S	08°55' S
314.	An aircraft is at latitude 10 N and is flying South at 444 km/hour. After 3 hours the latitude is ?	10 S	02 N	02 S	0N / S
315.	The circumference of the Earth is approximately?	43200 nm	10800 nm	21600 nm	5400 nm
316.	The direct reading magnetic compass is made aperiodic (dead beat) by:	using long magnets	keeping the magnetic assembly mass close to the pivot point and using damping wires	pendulous suspension of the magnetic assembly	using the lowest acceptable viscosity compass liquid
317.	You are flying at 400 kts TAS, Indicated temperature -50°C. What is your COAT?	-67°C	-50°C	-33°C	-17°C
318.	You are flying at FL330 at Mach No 0.9M.Ambient temperature is ISA +15°. What is your TAS?	600 knots	595 knots	540 knots	505 knots
319.	Given: True Hdg 145°, TAS 240 kt, True Track 150°, G/S 210 kt, calculate the W/V	360/35	295/35	180/35	115/35
320.	G/S = 240 knots, Distance to go = 500 nm. What is time to go?	20 minutes	29 minutes	2h 05 m	2h 12 m
321.	Airfield elevation is 1000 feet. The QNH is 988 Use 27 feet per hectopascal. What is pressure altitude?	675 feet	325 feet	1675 feet	825 feet
322.	A pilot receives the following signals from a VOR DME station. Radial = 180° +/- 1°, distance = 200 nm What is the approximate maximum error?	+/- 2 nm	+/- 3.5 nm	+/- 7 nm	+/- 1 nm
323.	You are flying a VFR route and have become uncertain of your position. Which is the best course of action?	set heading towards a line feature - coastline, river or motorway	turn round and fly your flight plan tracks in reverse until you see something you recognised before	fly a series of ever-expanding circles from your present position till you find your next check point	turn round and fly your flight plan in reverse back to base
324.	A non-perspective chart:	is produced directly from a light projection of a Reduced	cannot be used for navigation	is produced by mathematically adjusting a	is used for a Polar Stereographic projection

				light projection of the Reduced Earth	
		Earth			
325.	On a Mercator chart, a Rhumb Line appears as a:	small circle concave to the nearer pole	curve convex to the nearer pole	complex curve	straight line
326.	Where is scale correct on a Transverse Mercator chart?	along the great Circle of Tangency	at the Poles and the Equator	along the Datum Meridian and at meridians at 90° to it	at the Greenwich meridian
327.	What is the main use of a Transverse Mercator chart?	flying a specified Great Circle route	flying an equatorial route	mapping countries with a large N/S extent but a lesser E/W extent	mapping countries with a large E/W extent but a lesser N/S extent
328.	What is the main use of an Oblique Mercator chart?	flying a specified Great Circle route	flying an equatorial route	mapping countries with a large N/S extent but a lesser E/W extent	mapping countries with a large E/W extent but a lesser N/S extent
329.	When does perihelion occur?	early January	mid March	early July	42634
330.	When does aphelion occur?	early January	mid March	early July	42634
331.	Viewed from the North Celestial Pole (above the North Pole), the Earth orbits the Sun	clockwise in a circular orbit	anti-clockwise in a circular orbit	clockwise in an elliptical orbit	anti-clockwise in an elliptical orbit
332.	When do `equinoxes' occur?	December and June	February and November	March and September	January and July
333.	When it is the Winter Solstice in the Southern Hemisphere, the Declination of the Sun is	00° N/S	23 ½°N	66½°N	23½°S
334.	When it is the Winter Solstice in the Southern Hemisphere, the sun will be overhead	the Arctic Circle	the Tropic of Capricorn	the equator	the Tropic of Cancer
335.	What is the angle between the Equinoctial and the Ecliptic?	66'/20	23'/20	varies between 23'/20N and 23'/20S	varies between 66'/20N and 66'/20S
336.	The Declination of a celestial body (the Sun) measured on the Celestial Sphere is analogous (equivalent) to on the Earth?	latitude	longitude	altitude of the body measured from the sensible horizon	co-latitude
337.	The maximum difference between mean noon (1200LMT) and real/apparent noon occurs in	January/July	March/September	November/February	December/June
338.	The maximum difference between Mean Time and Apparent Time is:	21 minutes	16 minutes	30 minutes	there is no difference
339.	What is the length of a Sidereal Year?	365 days	366 days	365 days 6 hrs	365 days 5 hrs 48.75 minutes
340.	The definition of Local Mean Time (LMT) is:	time based upon the average movement of the Earth around	when the Mean Sun is transitting (crossing) your	when the Mean Sun is transitting (crossing) your	all of the above.

		the Sun.	meridian, it is 1200 hrs LMT.	anti-meridian, it is 0000 hrs LMT (2400 hrs LMT, previous day).	
341.	Local Mean Time (LMT) always changes by a day when crossing ?	the Greenwich Meridian	180°E/W	the International Date Line	the Equator
342.	Zone Time (ZT) is used?	by aircraft on trans-oceanic routes	as legal time in all countries	by ships at sea	in polar regions
343.	What is the Zone Number for longitude 127°30'W	8	9	-8	-9
344.	On Mid-winter Day in the Northern Hemisphere, the sun will be overhead:	66 1/2 S	23 1/2 N	23 1/2 S	the Equator
345.	Civil Twilight is?	the period between sunset and the end of Evening Civil Twilight (ECT)	the period between the start of Morning Civil Twilight (MCT) and sunrise	related to the position of the centre of the sun being 6° below the sensible horizon	all of the above
346.	In a standby direct reading compass there is:	a non-pendulously mounted magnet system.	a single pendulously mounted bar magnet.	a circular magnet or pair of bar magnets pendulously mounted.	a low magnetic moment system, either of circular or bar configuration.
347.	The main requirements of a direct reading magnetic compass are that it should be:	horizontal, sensitive, periodic.	easily read, floating in a transparent liquid, quick to react to change in aircraft heading.	positioned directly in front of the pilot, easily corrected for magnetic deviation, aperiodic	aperiodic, horizontal, sensitive.
348.	For a position in the southern hemisphere, the effect of acceleration errors are greatest on headings:	180°(C) and 360°(C)	045°(C) and 225°(C)	135°(C) and 315°(C)	090°(C) and 270°(C)
349.	In a standby compass the magnet system is immersed in a transparent liquid. The purpose of this liquid is to:	increase sensitivity, increase aperiodicity.	increase sensitivity, decrease aperiodicity.	increase sensitivity at high latitudes, lubricate bearings.	increase sensitivity, reduce liquid swirl.
350.	To improve the horizontality of a compass, the magnet assembly is suspended from a point:	on the centre line of the magnet.	below the centre of gravity.	above the centre of gravity.	varying with magnetic latitude.
351.	During a sustained turn .... the nearer magnetic pole, the effect of liquid swirl will .... compass turning error.	away from increase.	towards not affect.	away from not affect.	towards increase
352.	When carrying out a turn at the magnetic equator there will be:	no turning error.	a tendency to underread turns through south and overread turns through north.	a tendency to underread turns due to liquid swirl.	no turning error when turning through east or west only.

353.	OAT = +35°C, Pressure alt = 5000 feet. What is true alt?	4550 feet	5550 feet	4290 feet	5320 feet
354.	An aircraft flies a great circle track from 56°N 070°W to 62°N 110°E. The total distance travelled is?	3720 NM	5420 NM	1788 NM	2040 NM
355.	The sensitivity of a direct reading magnetic compass is:	Inversely proportional to the horizontal component of the earth's magnetic field.	Proportional to the horizontal component of the earth's magnetic field.	Inversely proportional to the vertical component of the earth's magnetic field.	Inversely proportional to the vertical and horizontal components of the earth's magnetic field
356.	What is the definition of magnetic variation?	The angle between the direction indicated by a compass and Magnetic North.	The angle between True North and Compass North.	The angle between Magnetic North and True North.	The angle between Magnetic Heading and Magnetic North.
357.	Which of these is a correct statement about the Earth's magnetic field:	It acts as though there is a large blue magnetic pole in Northern Canada	The angle of dip is the angle between the vertical and the total magnetic force.	It may be temporary, transient, or permanent.	It has no effect on aircraft deviation.
358.	What is the advantage of the remote indicating compass (slaved gyro compass) over the direct reading magnetic compass?	It is lighter	It is connected to a source of electrical power and so is more accurate	It senses the earth's magnetic field rather than seeks it, so is more sensitive	It is not affected by aircraft deviation
359.	In a ring laser gyro, the purpose of the dither motor is to:	Enhance the accuracy of the gyro at all rotational rates.	Overcome laser lock.	Compensate for transport wander.	Stabilise the laser frequencies.
360.	Laser lock is overcome in an IRS system by using a piezo-electric motor which utilises the principle of	shake	SAGNAC	dither	vibration
361.	An aircraft at position 6000N 00522W flies 165 km due East. What is the new position?	6000N 00820E	6000N 00224W	6000N 00108E	6000N 00108W
362.	By what amount must you change your rate of descent given a 10 knot increase in headwind on a 3° glideslope?	50 feet per minute increase	30 feet per minute increase	50 feet per minute decrease	30 feet per minute decrease
363.	In which months is the difference between apparent noon and mean noon the greatest?	November and February	January and July	March and September	June and December
364.	5 hours 20 minutes and 20 seconds hours time difference is equivalent to which change of longitude?	81°30'	78° 15'	79° 10'	80° 05'
365.	On a Direct Mercator chart, great circles are shown as:	Curves convex to the nearer pole	Straight lines	Rhumb lines	Curves concave to the nearer pole
366.	The scale on a Lambert's conformal conic	is constant along a meridian of	is constant along a parallel of	varies slightly as a function	is constant across the

		longitude	latitude	of latitude and longitude	whole map
	chart				
367.	Heading is 156°T, TAS is 320 knots, W/V is 130/45. What is your true track?	160	152	104	222
368.	Convergence on a Transverse Mercator chart is correct at:	the datum meridian only	the datum meridian and the Equator	the Equator and the Poles	the Parallel of Origin
369.	The agonic line:	is midway between the magnetic North and South poles	follows the geographic equator	is the shorter distance between the respective True and Magnetic North and South poles	Follows separate paths out of the North polar regions, one currently running through Western Europe and the other through the USA
370.	On a 12% glide slope, your groundspeed is 540 knots. What is your rate of descent?	6550 feet/min	4820 feet/min	8740 feet/min	3120 feet/min
371.	In an Inertial Navigation System, what is the output of the first stage North/South integrator?	groundspeed	latitude	velocity along the local meridian	change of latitude
372.	In which month does aphelion occur?	January	March	July	November
373.	The term drift refers to the wander of the axis of a gyro in?	any plane	the horizontal plane	the vertical plane	the vertical and horizontal plane
374.	The pressure alt is 29000 feet and the SAT is -55°C. What is density altitude?	27500 feet	26000 feet	30000 feet	31000 feet
375.	How does scale change on a normal Mercator chart?	Expands as the secant z (2 co-latitude)	Expands directly with the secant of the latitude	Correct on the standard parallels, expands outside them, contracts within them	Expands as the secant of the E/W great circle distance
376.	Groundspeed is 540 knots. 72 ran to go. What is time to go?	8 mins	9 mins	18 mins	12 mins
377.	An aircraft at FL370 is required to commence descent at 120 NM from a VOR and to cross the facility at FL130. If the mean GS for the descent is 288 kt, the minimum rate of descent required is:	920 ft/min	890 ft/min	860 ft/min	960 ft/min
378.	What is the highest latitude on the Earth at which the Sun can be vertically overhead?	23½°	66½°	45°	90°
379.	The angle between True North and Magnetic north is known as:	deviation	variation	alignment error	dip
380.	An aircraft is at 10° N and is flying South at	10°S	02° N	02°S	00° N/S

	444 km/hour. After 3 hours the latitude is:				
381.	Given that: A is N55o E/W 000° B is N54° E010o, If the true great circle track from A to B is 100° T, what is the true Rhumb Line track at A?	096°	107°	104°	100°
382.	The angle between the plane of the Equator and the plane of the Ecliptic is:	66.5°	23.5°	25.3°	65.6°
383.	Why are the detector units of slaved gyro compasses usually located in the aircraft wingtips?	With one detector unit in each wingtip, compass deviations are cancelled out.	To isolate the detector unit from the aircraft deviation sources.	To isolate the detector unit from the Earth's magnetic field.	To reduce turning and acceleration errors.
384.	What is the maximum possible value of Dip Angle?	66°	180°	90°	45°
385.	Given: Magnetic heading 311o Drift is 10° left Relative bearing of NDB 270 What is the magnetic bearing of the NDB treasured from the aircraft?	221°	208°	211°	180°
386.	The initial straight track from A (75N 60E) to B (75N 60W) on a Polar Stereographic chart is:	030°	360°	060°	330°
387.	What is the weight in kilogrammes of 380 US Gallons at a Specific Gravity of 0.78?	1123	2470	5434	543
388.	An aircraft's compass must be swung:	If the aircraft has been in the hangar for a long time and has been moved several times.	If the aircraft has been subjected to hammering.	Every maintenance inspection	After a change of theatre of operations at the same magnetic latitude.
389.	What is the dip angle at the South Magnetic Pole?	0°	90°	180°	64°
390.	What is the reason for seasonal changes in climate?	Because the Earth's spin axis is inclined to the plane of its orbit round the Sun	Because the distance between the Earth and the Sun varies over a year	Because the Earth's orbital speed round the Sun varies according to the time of the year	Because of the difference between the Tropical Year and the Calendar Year
391.	Some inertial reference systems are known as 'strapdown'. This means:	The system is mounted on a stabilised platform.	The system is mounted and fixed to the aircraft structure	The accelerometers are fixed but the gyros are stabilised.	The gyros are fixed but the accelerometers are stabilised
392.	An aircraft is on the 025 radial from Shannon VOR (SHA, 5243N 00853W) at 49 DME. What is its position?	5329N 00930W	5239N 00830W	5229N 00930W	5329 00830W
393.	At what latitude does the maximum	0°	45°	60°	90°

	difference between geodetic and geocentric latitude occur?				
394.	Given: Aircraft height = 2500 feet, ILS GP angle = 3°-, at what approximate distance from the threshold can you expect to intercept the glide-path?	8.0 nm	14.5 nm	13.1 nm	7.0 nm
395.	In which of the following projections does a plane surface touch the Reduced Earth at one of the Poles?	Gnomic	Stereographic	Lambert's	Direct Mercator
396.	An aircraft at position 0000 N/S 16327W flies a track of 225°-T for 70 nm. What is its new position?	0049N 16238W	0049S 16238W	0049N 16416W	0049S 16416W
397.	On a chart, meridians at 43N are shown every 10 degrees apart. This is shown on the chart by a distance of 14 cm. What is the scale'?	1: 2,000,000	1: 4,000,000	1: 5,000,000	1: 6,000,000
398.	On a Transverse Mercator chart, scale is exactly correct along the?	Equator, parallel of origin and prime vertical	meridian of tangency	datum meridian and meridian perpendicular to it.	prime meridian and the equator.
399.	How do Rhumb lines (with the exception of meridians) appear on a Polar Stereographic chart?	concave to the nearer pole	convex to the nearer pole	an ellipse round the pole	straight lines
400.	What is the value of convergence on a polar stereographic chart?	0.8	1	0.866	0.5
401.	An aircraft on the Equator accelerates whilst traveling westwards. What will be the effect on a direct reading compass?	Indicates an increase in heading	No change	Indicates a decrease in heading	Indicates an apparent turn to the North
402.	An aircraft flies 100 st mile in 20 minutes. How long does it take to fly 215 nm?	50 mins	37 mins	57 mins	42 mins
403.	What is the duration of civil twilight?	From the moment when the centre of the sun is on the sensible horizon until the centre reaches a depression angle of 6° from the sensible horizon.	From the moment when the tip of the sun disappears below the sensible horizon until the centre reaches a depression angle of 6° from the sensible horizon.	From the moment when the centre of the sun is on the visual horizon until the centre reaches a depression angle of 6° from the sensible horizon.	From the moment when the tip of the sun disappears below the visual horizon until the centre reaches a depression angle of 6° from the sensible horizon
404.	What is the shortest distance between Point	5400 nm	6318 nm	6557 nm	6000 nm

	'A' (3543N 00841E) and Point 'B' (5417N 17119W)?				
405.	On which chart projection is it not possible to show the North Pole?	Direct Mercator	Lamberts	Transverse Mercator	Polar Stereographic
406.	What is the formula for Conversion Angle?	Change of longitude x Sine latitude	Change of longitude x ½ Sine mean longitude	Change of longitudex½ Sine mean latitude	Change of longitude x Cosine latitude
407.	On 27 Feb at 52°S 040°E sunrise is a 0243UTC. On the same day at 52°S 035°W the time of sunrise is?	0743 UTC	0243 UTC	2143 UTC	0543 UTC.
408.	A compass swing is performed in order to correct for?	acceleration	deviation	variation	aperiodicity
409.	Isogonals are lines of equal:	compass deviation	magnetic variation	wind velocity	pressure
410.	On a Direct Mercator chart, a rhumb line appears as a:	small circle concave to the nearer pole	straight line	curve convex to the nearer pole	spiral curve
411.	Given: IAS 120 kt, FL 80, OAT +20°C What is the TAS?	141 kt	102 kt	120 kt	132 kt
412.	Given: True Course 300° Drift 8°R Variation 10°W Deviation -4° Calculate the compass heading.	322°	306°	278°	294°
413.	Given: True track 180° Drift 8°R Compass Heading 195° Deviation -2° Calculate the variation.	21°W	25°W	5°W	9°W
414.	Which of the following indicates an advisory airspace (ADA boundary?	A	B	C	D
415.	Given: Runway direction 083°(M), Surface WN 035/35kt. Calculate the effective headwind component.	24 kt	27 kt	31 kt	34 kt
416.	From the departure point, the distance to the point of equal time is:	proportional to the sum of ground speed out and ground speed back	inversely proportional to the total distance to go	inversely proportional to ground speed back	inversely proportional to the sum of ground speed out and ground speed back
417.	Position `B' is 240°(T) and 200 nm from `A'. If the position of `A' is N000 E100°, what is the position of `B'?	S01°40' E 101°40'	S01°40' E097°07'	N01°40' E097°07'	N01°40' E101°40'
418.	The maximum difference between the geocentric and geodetic latitude occurs at about:	45° North and South	90° North and South	60° North and South	0° North and South
419.	What is the time required to travel along the	1 hr 15 min	2 hr 30 min	1 hr 45 min	5 hr 00 min

	parallel of latitude 60° N between meridians 010°E and 030°W at a groundspeed of 480 kt?				
420.	What is the meaning of the term `standard time'?	It is another term for UTC	It is the time zone system applicable only in the USA.	It is an expression for local mean time.	It is the time set by the legal authorities for a country or part of a country.
421.	At a specific location, the value of magnetic variation:	depends on the magnetic heading	depends on the value of true heading	varies slowly over time	depends on the type of compass installed
422.	The value of magnetic variation:	has a maximum of 180°	varies between a maximum of 45°E and 45W	must be 0° at the magnetic equator	cannot exceed 90°
423.	The direct reading magnetic compass is made aperiodic (dead beat) by:	using long magnets	keeping the magnetic assembly mass close to the compass point and using damping wires	pendulous suspension of the magnetic assembly	using the lowest acceptable viscosity compass liquid
424.	An Oblique Mercator projection is used specifically to produce:	radio navigation charts in equatorial regions	topographical maps of large east/west extent	plotting charts in equatorial regions	charts of the great circle route between two points
425.	On the Transverse Mercator chart, scale is correct along the:	equator, parallel of origin and prime vertical	prime meridian and equator	datum meridian and the meridian perpendicular to it	meridian of tangency
426.	An aircraft travels 2.4 statute miles in 47 seconds. What is its groundspeed?	183 kt	13 kt	209 kt	160 kt
427.	Given: IAS 120 knots, FL 80, OAT +20°C, what is the TAS?	132 kt	141 kt	102 kt	120 kt
428.	Given: TAS 140 kt, HDG 005°(T), W/V 265/25, calculate the drift and groundspeed.	11R - 140 kt	10R - 146 kt	09R - 140 kt	11R - 142 kt
429.	If the Standard Time in Port of Spain, Trinidad (1 IN 066W) is 2215 on 7 Feb, what is the Standard Time in Vientiane, Laos (18N 103E)?	07 1115	08 1115	08 0915	07 0915
430.	On a chart, 49 nautical miles is represented by 7.0 centimeters. What is the scale?	1 /700,000	1 / 2,015,396	1 / 1,296,400	1 / 1,156,600
431.	Scale on map or chart can be expressed by:	The representative fraction	The plain statement	The graduated scale	All the above
432.	If the scale factor is other than unity the difference between scale factor and unity is called:	Scale deviation	Scale error	None of 'a' and 'b'	Both of 'a' and 'b'
433.	Earth convergence can be calculated by the formula:	earth convergence = ch.long X sin mean lat	earth convergence = ch. long X cos mean lat	earth convergence = ch. long X sec mean lat	None of the above