

# Exam simulation

ATPL - Airline Transport Pilot license - Aircraft General Knowledge - Airframe, Systems, Powerplant



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STUDENT NAME:

DATE AND TIME:

## 01. What does the word 'recleared' mean?

---

- a) Permission for proposed action granted
- b) An error has been made in my last transmission
- c) A change has been made to your last clearance
- d) Consider that transmission as not sent

## 02. What is the average vertical extent of radiation fog?

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- a) 2 000 FT.
- b) 5 000 FT.
- c) 500 FT.
- d) 10 000 FT.

## 03. In accordance with Air OPS, an operator must ensure that the MDH for a VOR/DME approach is not lower than:

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- a) 250 ft
- b) 350 ft
- c) 300 ft
- d) 200 ft

## 04. RADAR informs aircraft X-BC: 'X-BC identified'. What does this mean:

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- a) X-BC should perform an identification turn
- b) X-BC is not visible on the radar screen
- c) X-BC should operate the IDENT-button
- d) Radar identification has been achieved

## 05. What is the correct way of transmitting the number 118.1 to indicate a frequency?

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- a) One one eight one
- b) One eighteen one
- c) One one eight point one
- d) One one eight decimal one

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**06. On a Mercator chart, at latitude 60°N, the distance measured between W002° and E008° is 20 cm. The scale of this chart at latitude 60°N is approximately:**

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- a) 1: 278 000
- b) 1: 5 560 000
- c) 1: 2 780 000
- d) 1: 556 000

**07. The 'cocktail party effect' is:**

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- a) The tendency to believe information that reinforces our mental model of the world
- b) The ability to drink too much at social gathering
- c) The tendency not to perceive relevant information
- d) The ability to pick up relevant information unintentionally

**08. Considering only structural limitations, on long distance flights (at the aeroplane's maximum range), the traffic load is normally limited by:**

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- a) The maximum zero fuel mass.
- b) The maximum take-off mass.
- c) The maximum landing mass.
- d) The maximum zero fuel mass plus the take-off mass.

**09. On an instrument approach chart, a minimum sector altitude (MSA) is defined in relation to a radio navigation facility. Without any particular specification on distance, this altitude is valid to:**

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- a) 20 NM
- b) 25 NM
- c) 10 NM
- d) 15 NM

**10. What does the instruction 'Orbit right' mean?**

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- a) Turn right to avoid other traffic
- b) Make 360° turns to the right
- c) Leave the runway to the right
- d) Right-hand circuits are in use

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**11. The properties of a gyroscope are: 1 - rigidity in space 2 - rigidity on earth 3 - precession 4 - Schuler oscillations. The combination regrouping all the correct statements is:**

---

- a) 2, 3.
- b) 1, 4.
- c) 1, 3.
- d) 2, 4.

**12. The responsibility for determination of the mass of 'operating items' and 'crew members' included within the Dry Operating Mass lies with**

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- a) The authority of the state of registration.
- b) The commander.
- c) The person compiling the weighing schedule.
- d) The operator.

**13. Given: Distance from departure to destination: 2000 NM Endurance: 5 h TAS: 500 kt Ground Speed Out: 480 kt Ground Speed Home: 520 kt. What is the distance of the PSR from the departure point?**

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- a) 1248 NM
- b) 752 NM
- c) 624 NM
- d) 1040 NM

**14. A laser gyro consists of:**

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- a) A laser generating two light waves.
- b) Two moving cavities provided with mirrors.
- c) 2 electrodes (anode and cathode).
- d) A gyro with 2 degrees of freedom.

**15. An urgency message shall be preceded by the radiotelephony urgency signal:**

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- a) URGENCY, spoken three times
- b) PAN PAN, spoken three times
- c) ALERFA, spoken three times
- d) MAYDAY, spoken three times

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**16. What does the abbreviation 'RNAV' mean?**

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- a) Radar aided navigation
- b) Route navigation
- c) Area navigation
- d) Radio navigation

**17. The expression 'transmitting blind due to receiver failure' implies that no answer is expected. It shall be used by:**

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- a) An aircraft station doing blind transmissions at a 'non-towered' airfield
- b) A radar controller performing a PAR or SRE final approach
- c) An aircraft station being aware of receiver failure
- d) A ground station broadcasting information to all listening stations

**18. What does the word 'cancel' mean?**

---

- a) A change has been made to your last clearance
- b) Wait and I will call you
- c) Annul the previously transmitted clearance
- d) Consider that transmission as not sent

**19. At which levels may Reduced Vertical Separation Minimum (RVSM) be used within the NAT region?**

---

- a) Between FL275 and FL400 inclusive.
- b) Between FL245 and FL410 inclusive.
- c) Between FL290 and FL410 inclusive.
- d) Below FL290.

**20. A pilot who smokes will lose some of his capacity to transport oxygen combined with hemoglobin. Which percentage of his total oxygen transportation capacity would he give away when he smokes one pack of cigarettes a day?**

---

- a) 5 - 8%
- b) 20 - 25%
- c) 12 - 18%
- d) 0.5 - 2%

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**21. What is the average track (°M) and distance between KER NDB (N5210.9 W00931.5) and CRN NDB (N5318.1 W00856.5)?**

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- a) 197° - 71 NM
- b) 205° - 71 NM
- c) 025° - 70 NM
- d) 017° - 70 NM

**22. The touchdown areas located at both ends of the runways are typical for the appearance of:**

---

- a) Viscous hydroplaning
- b) Rubber steaming hydroplaning
- c) Rubber reversion hydroplaning
- d) Dynamic hydroplaning

**23. How shall a pilot inform the control tower that they have to abandon the take-off manoeuvre:**

---

- a) Stopping
- b) Cancelling take-off
- c) Aborting take-off
- d) Abandoning take-off

**24. The units of wing loading (I)  $W / S$  and (II) dynamic pressure  $q$  are:**

---

- a) (I) kg / m, (II) N / m<sup>2</sup>.
- b) (I) N / m<sup>3</sup>, (II) kg / m<sup>2</sup>.
- c) (I) N / m, (II) kg.
- d) (I) N / m<sup>2</sup>, (II) N / m<sup>2</sup>.

**25. The effect of experience and repetition on performance:**

---

- a) Can both be beneficial and negative
- b) Is always beneficial
- c) Is never negative
- d) Is always negative

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## 26. The centre of gravity is the

---

- a) Centre of thrust along the longitudinal axis, in relation to a datum line
- b) Point where all the aircraft mass is considered to be concentrated
- c) Neutral point along the longitudinal axis, in relation to a datum line
- d) Focus along the longitudinal axis, in relation to a datum line

## 27. The longitudinal separation minima based on time between aircraft at same cruising level where navigation aids permit frequent determination of position and speed and the preceding aircraft is maintaining a true airspeed of 20 kt or more faster than the succeeding aircraft, is:

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- a) 5 minutes.
- b) 15 minutes.
- c) 10 minutes.
- d) 3 minutes.

## 28. In the ATC flight plan Item 19, emergency and survival equipment carried on the flight should be indicated by:

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- a) Placing a tick in the relevant box
- b) Circling the relevant box
- c) Listing the items carried on the 'REMARKS' line
- d) Crossing out the box relevant to any equipment not carried

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## 29. The effects of Galactic radiation:

---

- a) Increases with altitude
- b) Remains steady up to 49,000 ft and thereafter increases
- c) Is unaffected by altitude
- d) Decreases with altitude

## 30. The reasons for disconnecting a constant speed drive (CSD) of an AC generator in flight are: 1 - low oil pressure in the CSD. 2 - slight variation about the normal operating frequency. 3 - high oil temperature in the CSD. 4 - excessive variation of voltage and kVAR. The combination that regroups all of the correct statements is:

---

- a) 2, 4.
- b) 1, 4.
- c) 1, 3.
- d) 2, 3.

## 31. The fan of a turbo-fan engine is driven by:

---

- a) The LP turbine.
- b) Airflow drawn across it by the HP compressor.
- c) The HP compressor through reduction gearing.
- d) The HP turbine.

## 32. From the data contained in the attached appendix, the maximum allowable take-off mass and traffic load is respectively:

---

- a) 61600 kg and 12150 kg
- b) 60425 kg and 10975 kg
- c) 66770 kg and 17320 kg
- d) 68038 kg and 18588 kg

## 33. An aircraft leaves point P (60N 030W) on a true heading equal to 090 while the gyro compass, which is assumed to be operating perfectly and without an hourly rate corrector unit, indicates 000. The aircraft arrives at point Q (62N 010W) on a true heading equal to 095. On the journey from P to Q the gyro compass remains in free gyro mode. If the flight lasted 1 h 30 min, the gyro heading at Q will be:

---

- a) 328
- b) 334
- c) 003
- d) 345

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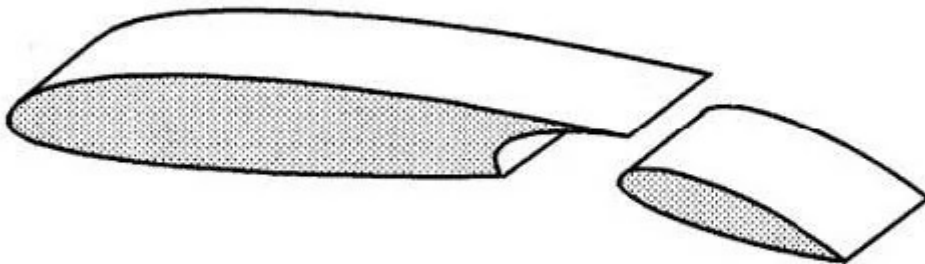
**34. Given: Distance 'Q' to 'R' 1760 NM Groundspeed 'out' 435 kt Groundspeed 'back' 385 kt. The time from 'Q' to the Point of Equal Time (PET) between 'Q' and 'R' is:**

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- a) 106 MIN
- b) 110 MIN
- c) 102 MIN
- d) 114 MIN

**35. Which type of flap is shown in the picture?**

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- a) Double slotted flap
- b) Fowler flap
- c) Split flap
- d) Plain flap

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**36. The conditions to be met to activate a shunt generator are: 1. presence of a permanent field 2. closed electrical circuit 3. generator terminals short-circuited 4. minimum rotation speed The combination of correct statements is:**

---

- a) 1, 3
- b) 1, 2
- c) 2, 3
- d) 1, 4

**37. What is the average track (°M) and distance between WTD NDB (N5211.3 W00705.0) and BAL VOR (N5318.0 W00626.9)? Use chart E(LO)1**

---

- a) 206° - 71 NM
- b) 018° - 153 NM
- c) 198° - 72 NM
- d) 026° - 71 NM

**38. The data that needs to be inserted into an Inertial Reference System in order to enable the system to make a successful alignment for navigation is:**

---

- a) aircraft heading
- b) the position of an in-range DME
- c) aircraft position in latitude and longitude
- d) airport ICAO identifier

**39. What does the abbreviation 'RVR' mean?**

---

- a) Runway visibility report
- b) Radar vectors requested
- c) Recleared via route...
- d) Runway visual range

**40. Vertical wind shear is**

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- a) A change of horizontal wind direction and/or speed with height
- b) A horizontal shear of vertical wind
- c) A change of horizontal wind direction and/or speed with horizontal distance
- d) A change of vertical wind speed with horizontal distance

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## 41. The 'maximum tyre speed' limits:

- a) V1 in KT TAS
- b) VR, or VMU if this is lower than VR
- c) VLOF in terms of ground speed
- d) V1 in KT ground speed

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## 42. What is the radiotelephony call sign for the aeronautical station indicating approach control radar departures?

- a) ...CONTROL
- b) ...RADAR
- c) ...DEPARTURE
- d) ...APPROACH

---

## 43. The Mean Aerodynamic Chord (MAC) for a given wing of any planform is

- a) The chord of a large rectangular wing
- b) The average chord of the actual aeroplane
- c) The chord of a rectangular wing with same moment and lift
- d) The wing area divided by the wing span

---

## 44. Other factors remaining constant and not limiting, how does increasing pressure altitude affect allowable take-off mass?

- a) Allowable take-off mass increases
- b) There is no effect on allowable take-off mass
- c) Allowable take-off mass decreases
- d) Allowable take-off mass remains uninfluenced up to 5000' pressure altitude

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## 45. An aeroplane must be re-weighed at certain intervals. Where an operator uses 'fleet masses' and provided that changes have been correctly documented, this interval is

- a) 9 years for each aeroplane.
- b) Whenever a major modification is carried out.
- c) Whenever the Certificate of Airworthiness is renewed.
- d) 4 years for each aeroplane.

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**46. The selection of code 7700 on an aircraft SSR transponder indicates:**

---

- a) An emergency
- b) Unlawful interference with the planned operation of the flight
- c) Transponder malfunction
- d) Radio communication failure

**47. The 0° C isotherm is forecast to be at FL 50. At what FL would you expect a temperature of -6° C?**

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- a) FL 20
- b) FL 80
- c) FL 110
- d) FL 100

**48. When flying in accordance with IFR, which of the following best describes the term 'Visual approach' ?**

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- a) A visual manoeuvre executed by an IFR flight when the weather conditions at the aerodrome of destination are equal to or better than required VMC minima
- b) An approach executed by an IFR flight unable to maintain VMC
- c) An extension of an instrument approach procedure to bring an aircraft into position for landing on a runway which is not suitably located for straight-in-approach
- d) An approach by an IFR flight when either part or all of an instrument approach procedure is not completed and the approach is executed in visual reference to terrain

**49. Given: Maximum structural take-off mass= 146 900 kg Maximum structural landing mass= 93 800 kg Maximum zero fuel mass= 86 400 kg. Trip fuel= 27 500 kg. Block fuel= 35 500 kg. Engine starting and taxi fuel = 1 000 kg. The maximum take-off mass is equal to:**

---

- a) 113 900 kg
- b) 121 300 kg
- c) 120 300 kg
- d) 120 900 kg

**50. Excluding constants, the coefficient of induced drag (CDi) is the ratio of:**

---

- a) CL and CD
- b) CL and b (wing span)
- c) CL<sup>2</sup> and AR (aspect ratio)
- d) CL<sup>2</sup> and S (wing surface)

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**51. For an aeroplane with one fixed value of VA the following applies. VA is:**

---

- a) The speed at which unrestricted application of elevator control can be used, without exceeding the maximum manoeuvring limit load factor
- b) The maximum speed in smooth air
- c) Just another symbol for the rough air speed
- d) The speed at which the aeroplane stalls at the manoeuvring limit load factor at MTOW.

**52. Given: Distance from departure to destination: 400 NM Endurance: 2,5 h TAS: 115 kt Ground Speed Out: 130 kt Ground Speed Home: 105 kt What is the distance of the PSR from the departure point?**

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- a) 73 NM
- b) 179 NM
- c) 255 NM
- d) 145 NM

**53. Pain in the joints ('the bends') is a symptom of:**

---

- a) Decompression sickness
- b) Hypoxia
- c) Air-sickness
- d) Barotrauma

**54. Due to 'Doppler' effect an apparent decrease in the transmitted frequency, which is proportional to the transmitter's velocity, will occur when:**

---

- a) The transmitter and receiver move towards each other
- b) The transmitter moves away from the receiver
- c) There is no relative movement between the transmitter and the receiver
- d) The transmitter moves toward the receiver

**55. Which of the following will decrease V1?**

---

- a) Increased take-off mass
- b) Inoperative anti-skid
- c) Increased outside air temperature
- d) Inoperative flight management system

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**56. How is adverse yaw compensated for during entry into and roll out from a turn?**

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- a) Differential aileron deflection
- b) Servo tabs
- c) Anti-balanced rudder control
- d) Horn-balanced controls

**57. When turning into a desired radial, FD bars indicate:**

---

- a) 45° angle of bank.
- b) 30° angle of bank.
- c) Correct attitude to intercept radial.
- d) 15° angle of bank.

**58. On the readability scale what does 'readability 1' mean?**

---

- a) Readable
- b) Perfectly readable
- c) Unreadable
- d) Readable but with difficulty

**59. If the continuity equation is applicable, what will happen to the air density ( $\rho$ ) if the cross sectional area of a tube changes? (low speed, subsonic and incompressible flow)**

---

- a)  $\rho_1 < \rho_2$
- b)  $\rho_1 > \rho_2$
- c)  $\rho_1 = \rho_2$
- d) The density depends on the change of the tube area

**60. The difference between (1) a fuse and (2) a circuit breaker is:**

---

- a) (1) suitable for high currents, (2) not suitable for high currents.
- b) (1) not suitable for high currents, (2) suitable for high currents.
- c) (1) not resettable, (2) resettable.
- d) (1) not resettable, (2) not resettable.

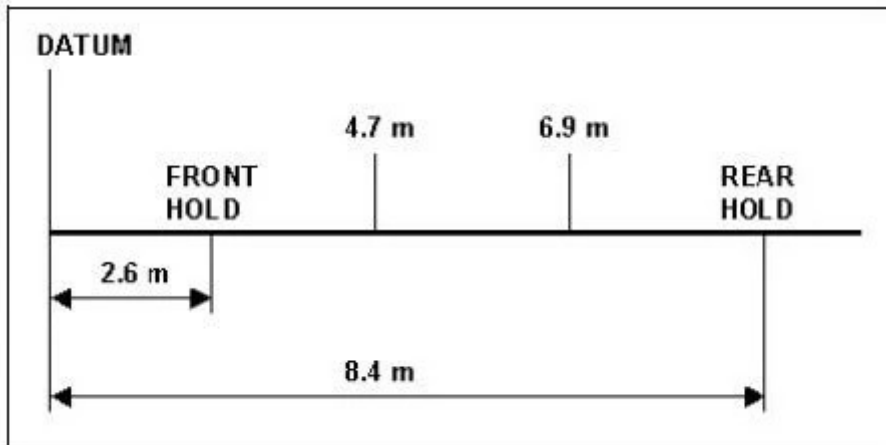
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61. The total mass of an aeroplane is 145000 kg and the centre of gravity limits are between 4.7 m and 6.9 m aft of the datum. The loaded centre of gravity position is 4.4 m aft. How much mass must be transferred from the front to the rear hold in order to bring the out of limit centre of gravity position to the foremost limit:



- a) 3 500 kg
- b) 35 000 kg
- c) 7 500 kg
- d) 62 500 kg

62. Any prolonged exposure to noise in excess of 90 dB can result in:

- a) Presbycusis (effects of aging)
- b) Conductive hearing loss
- c) A ruptured ear drum
- d) Noise induced hearing loss

63. An aircraft is squawking 7600. This indicates:

- a) It is diverting to the alternate aerodrome
- b) It is requesting immediate level change
- c) It is unable to establish communication due to radio equipment failure
- d) It is about to make a forced landing

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## 64. The fuel system boost pumps are used to:

---

- a) Feed the fuel control units, which inject the pressurized fuel into the engine.
- b) Avoid the bubbles accumulation.
- c) Avoid the bubbles accumulation and feed the lines with fuel for directing it to the engine at a positive pressure.
- d) Feed the lines with fuel for directing it to the engine at a positive pressure.

## 65. According to the ILS coverage area as defined by ICAO Annex 10, in which of the following situations will the pilot be guaranteed a reliable signal from the localiser?

---

- a) 19NM from touchdown inbound and 13° displaced from the localiser centreline.
- b) 27NM from touchdown inbound and 8° displaced from the localiser centreline.
- c) 10NM from touchdown inbound and 38° displaced from the localiser centreline.
- d) 20NM from touchdown inbound and 8° displaced from the localiser centreline.

## 66. The radar controller is transmitting: 'Confirm squawk'. What does he mean?

---

- a) The controller wants to know which code is set on the transponder.
- b) The controller requests the registration of the aircraft.
- c) The controller wants you to transmit your bearing.
- d) The controller wants you to repeat your last transmission once again.

## 67. In the ATC flight plan Item 15, for a flight along a designated route, where the departure aerodrome is not on or connected to that route:

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FLIGHT PLANNING ICAO MODEL FLIGHT PLAN FORM			
FLIGHT PLAN PLAN DE VOL			
1. PRIORITY Précédence FF	2. AIRCRAFT Aéronef N12345		
3. FLIGHT TIME Durée de vol 01:30	4. DEPARTURE Départ LHR		
5. SPECIFIC IDENTIFICATION OF AIRCRAFT Identification particulière de l'aéronef N12345			
6. MESSAGE FROM Message de l'opérateur FPL	7. AIRCRAFT IDENTIFICATION Identification de l'aéronef N12345	8. FLIGHT RULES Règles de vol VFR	9. TYPE OF FLIGHT Type de vol T
10. NUMBER Nombre 1	11. TYPE OF AIRCRAFT Type d'aéronef A320	12. BASE TERRAINANCE CAT Catégorie de base 1	13. EQUIPMENT Équipement S
14. DEPARTURE AIRPORT Aéroport de départ LHR	15. ENROUTE En route LHR	16. DESTINATION AIRPORT Aéroport de destination CDG	17. OTHER INFORMATION Autres renseignements N
18. SUPPLEMENTARY INFORMATION Renseignements complémentaires P		19. AIRCRAFT WEIGHT Poids de l'aéronef 10000	20. AIRCRAFT TYPE Type d'aéronef A320
21. INSURANCE Assurance E		22. PERSONS ON BOARD Personnes à bord P	23. AIRCRAFT MARKING Marquage de l'aéronef R/U V E
24. EQUIPMENT Équipement S/P		25. COMMUNICATIONS Communications D/M	26. LANGUAGE Langue J/L F U V
27. NUMBER Nombre D		28. CAPACITY Capacité C	29. COLOUR Couleur C
30. AIRCRAFT TYPE Type d'aéronef A		31. AIRCRAFT TYPE Type d'aéronef N	
32. AIRCRAFT TYPE Type d'aéronef C		33. AIRCRAFT TYPE Type d'aéronef C	

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- a) The letters 'DCT' should be entered, followed by the point of joining the ATS route
- b) It is not necessary to indicate the point of joining that route as it will be obvious to the ATS unit.
- c) The words 'as cleared' should be entered
- d) It is necessary only to give the first reporting point on that route

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**68. The circumference of The Earth is approximately:**

---

- a) 43200 NM
- b) 5400 NM
- c) 21600 NM
- d) 10800 NM

**69. NAT HLA is the abbreviation for:**

---

- a) North Atlantic High-Level Area
- b) North Atlantic High Level Airspace
- c) North Atlantic High-Level Approach
- d) North Atlantic Handling and Logistics Area

**70. 265 US-GAL equals? (Specific gravity 0.80)**

---

- a) 862 kg
- b) 895 kg
- c) 803 kg
- d) 940 kg

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## Response Scheme

Compare your answers with the following diagram and mark your score!

01: C	02: C	03: A	04: D
05: D	06: C	07: D	08: B
09: B	10: B	11: C	12: D
13: A	14: A	15: B	16: C
17: C	18: C	19: C	20: A
21: C	22: A	23: A	24: D
25: A	26: B	27: A	28: D
29: A	30: C	31: A	32: A
33: D	34: D	35: B	36: B
37: D	38: C	39: D	40: A
41: C	42: C	43: C	44: C
45: A	46: A	47: B	48: D
49: D	50: C	51: D	52: D
53: A	54: B	55: B	56: A
57: C	58: C	59: C	60: C
61: C	62: D	63: C	64: C
65: B	66: A	67: A	68: C
69: B	70: C		

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## Response form

Use this form to mark your answers

01: _____	02: _____	03: _____	04: _____
05: _____	06: _____	07: _____	08: _____
09: _____	10: _____	11: _____	12: _____
13: _____	14: _____	15: _____	16: _____
17: _____	18: _____	19: _____	20: _____
21: _____	22: _____	23: _____	24: _____
25: _____	26: _____	27: _____	28: _____
29: _____	30: _____	31: _____	32: _____
33: _____	34: _____	35: _____	36: _____
37: _____	38: _____	39: _____	40: _____
41: _____	42: _____	43: _____	44: _____
45: _____	46: _____	47: _____	48: _____
49: _____	50: _____	51: _____	52: _____
53: _____	54: _____	55: _____	56: _____
57: _____	58: _____	59: _____	60: _____
61: _____	62: _____	63: _____	64: _____
65: _____	66: _____	67: _____	68: _____
69: _____	70: _____		