Exam simulation

ATPL - Airline Transport Pilot license - Human Performance and Limitations

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STUDENT NAME:	DATE AND TIME:

01. . 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

02. In mass and balance calculations which of the following describes the datum?

a) It is the most forward position of the centre of gravity.

b) It is the most aft position of the centre of gravity.

c) It is the point on the aircraft designated by the manufacturers from which all centre of gravity measurements and calculations are made.

d) It is the distance from the centre of gravity to the point through which the weight of the component acts.

03. Basic Empty Mass is:

a) Dry Operating Mass minus fuel load.

b) Dry Operating Mass minus traffic load.

c) A component of Dry Operating Mass.

d) The actual take-off mass minus traffic load.

04. The capacity of a battery is expressed in terms of:

a) Volts.

b) Watts.

c) Ampere-hours.

d) Internal Resistance.

05. Interception, DAY or NIGHTWhich manoeuvre will be executed by an intercepting aircraft if the pilot of this aircraft wants to communicate to the intercepted aircraft 'YOU MAY PROCEED'?

a) Rocking aircraft twice in front of the intercepting aircraft, after acknowledgement by intercepted aircraft a slow level turn (normally to the left).

b) An abrupt break-away manoeuvre from the intercepted aircraft consisting of a climbing turn of 90 degrees or more without crossing the line of flight of the intercepted aircraft.

c) Rocking aircraft and flashing navigational lights at regular intervals.

d) Circling the intercepted aircraft in a counter-clockwise pattern for aeroplanes, in a clockwise pattern for helicopter.

06. Which of the following factors leads to the maximum flight time of a glide?

a) High mass

b) Low mass

c) Tailwind

d) Headwind

07. Find the SHORT DISTANCE CRUISE ALTITUDE for the twin jet aeroplane.Given: Brake release mass=45000 kg, Temperature=ISA + 20°C, Trip distance=50 Nautical Air Miles (NAM)

a) 7500 ft

b) 12500 ft

c) 10000 ft

d) 11000 ft[see Annex]

08. Which of the following statements about boundary layers is correct?

a) The turbulent boundary layer has more kinetic energy than the laminar boundary layer

b) The turbulent boundary layer will separate more easily than the laminar boundary layer

c) The turbulent boundary layer gives a lower skin friction than the laminar boundary layer

d) The turbulent boundary layer is thinner than the laminar boundary layer

09. According toPART-MED, licence holders do not exercise the privileges of their licences, related ratings or authorisations at any time when they are aware of any decrease in their medical fitness which might render them unable to safely exercise those privileges. They shall without undue delay seek the advice of the authority or AME when becoming aware of hospital or clinic admissions for:

a) More than 12 hours

b) Any period

c) More than one week

d) More than 12 days

10. An aircraft at FL370, M0.86, OAT -44°C, headwind component 110 kt, is required to reduce speed in order to cross a reporting point 5 MIN later than planned.If the speed reduction were to be made 420 NM from the reporting point, what Mach Number is required?

a) M0.75

b) M0.73

c) M0.79

d) M0.81

11. The minimum climb gradient required on the 2nd flight path segment after the take-off of a jet aeroplane is defined by the following parameters:1 Gear up2 Gear down3 Wing flaps retracted4 Wing flaps in take-off position 5 N engines at the take-off thrust6 (N- 1) engines at the take-off thrust7 Speed over the path equal to V2 + 10 kt 8 Speed over the path equal to 1.3 VS9 Speed over the path equal to V210 At a height of 35 ft above the runway The correct statements are:

a) 1, 4, 5, 10

b) 2, 3, 6, 9

c) 1, 5, 8, 10

d) 1, 4, 6, 9

12. The main reason for mounting the detector unit of a remote reading compass in the wingtip of an aeroplane or a helicopter tail-boom is:

a) To maximize the units exposure to the Earth's magnetic field.

b) To ensure that the unit is in the most accessible position on the aircraft for ease of maintenance.

c) By having detector units on both wingtips, to cancel out deviation effects caused by the aircraft structure.

d) To minimize the amount of deviation caused by aircraft magnetism and electrical circuits.

13. If the sum of all the moments in flight is not zero, the aeroplane will rotate about the:

a) Neutral point of the aeroplane.

b) Centre of gravity.

c) Centre of pressure of the wing.

d) Aerodynamic centre of the wing.

14. AIPWhich part of the AIP contains a list with 'Location Indicators'?

a) ENR

b) AD

c) GEN

d) LOC

15. What is the wavelength of an NDB transmitting on 375 kHz?

a) 800 m

b) 8 m

c) 80 m

d) The data is based on the direction to the satellite determined at the location of the antenna

16. On an aeroplane with a seating capacity of more than 30, it is decided to use standard mass values for computing the total mass of passengers. If the flight is not a holiday charter, the mass value which may be used for an adult is

a) 76 kg

b) 84 kg

c) 88 kg (male) 74 kg (female).

d) 84 kg (male) 76 kg (female).

17. 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.

18. On the readability scale what does READABILITY 1 mean?

a) Readable but with difficulty.

b) Unreadable.

c) Readable.

d) Perfectly readable.

19. In accordance with JAR-OPS 1, an airplane whose maximum take-off mass exceeds 5 700 kg or whose maximum approved passenger seating configuration is greater than 9 seats and less than 200 seats must be equipped with a:

a) Crash axe or a crow-bar in the flight deck.

b) Crow-bar in the flight deck and a crash axe in the passenger compartment.

c) Crash axe in the flight deck and a crow-bar in the passenger compartment.

d) Crash axe and a crow-bar in the passenger compartment.

20. In an ATC flight plan, Item 15 (route), a cruising pressure altitude of 32000 feet would be entered as:

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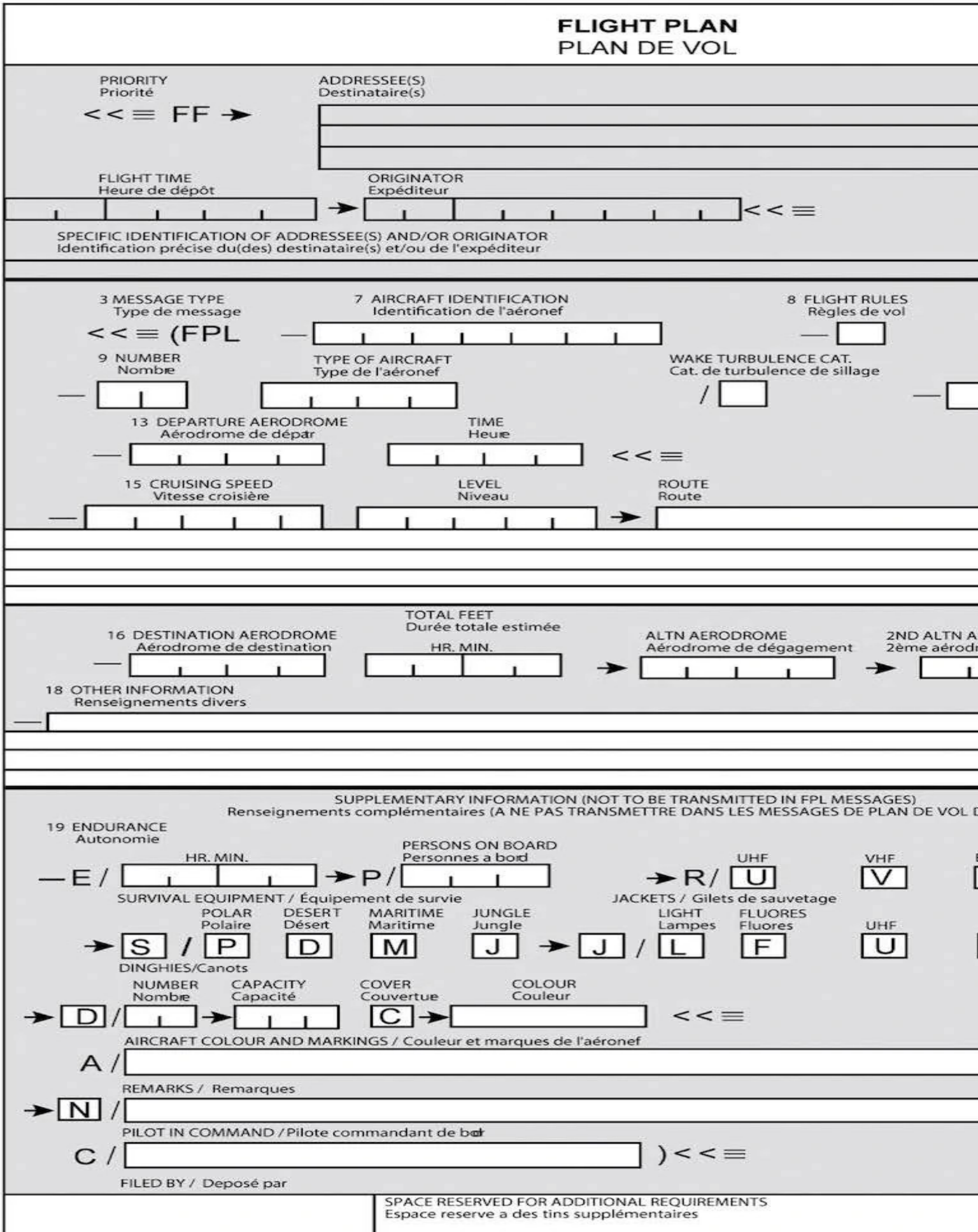
FLIGHT PLAN
PLAN DE VOL
PRIORITY
Priorité
<< ≡ FF →
ADDRESSEE(S)
Destinataire(s)
FLIGHT TIME
Heure de dépôt
ORIGINATOR
Expéditeur
<< ≡
SPECIFIC IDENTIFICATION OF ADDRESSEE(S) AND/OR ORIGINATOR
Identification précise du(des) destinataire(s) et/ou de l'expéditeur
3 MESSAGE TYPE
Type de message
<< ≡ (FPL
7 AIRCRAFT IDENTIFICATION
Identification de l'aéronef
8 FLIGHT RULES
Règles de vol
9 NUMBER
Nombre
TYPE OF AIRCRAFT
Type de l'aéronef
WAKE TURBULENCE CAT.
Cat. de turbulence de sillage
13 DEPARTURE AERODROME
Aérodrome de départ
TIME
Heure
<< ≡
15 CRUISING SPEED
Vitesse croisière
LEVEL
Niveau
ROUTE
Route
16 DESTINATION AERODROME
Aérodrome de destination
TOTAL FEET
Durée totale estimée
HR. MIN.
ALTN AERODROME
Aérodrome de dégagement
2ND ALTN A
2ème aérodr
18 OTHER INFORMATION
Renseignements divers
SUPPLEMENTARY INFORMATION (NOT TO BE TRANSMITTED IN FPL MESSAGES)
Renseignements complémentaires (A NE PAS TRANSMETTRE DANS LES MESSAGES DE PLAN DE VOL D
19 ENDURANCE
Autonomie
—E/
HR. MIN.
→P/
PERSONS ON BOARD
Personnes a bord
→R/
UHF
U
VHF
V
SURVIVAL EQUIPMENT / Équipement de survie
JACKETS / Gilets de sauvetage
POLAR
Polaire
DESERT
Désert
MARITIME
Maritime
JUNGLE
Jungle
LIGHT
Lampes
FLUORES
Fluores
UHF
→S / P D M J → J / L F U
DINGHIES/Canots
NUMBER
Nombre
CAPACITY
Capacité
COVER
Couvertue
COLOUR
Couleur
→D / → C → << ≡
AIRCRAFT COLOUR AND MARKINGS / Couleur et marques de l'aéronef
A /
REMARKS / Remarques
→N /
PILOT IN COMMAND / Pilote commandant de bord
C /) << ≡
FILED BY / Deposé par
SPACE RESERVED FOR ADDITIONAL REQUIREMENTS
Espace reserve a des tins supplémentaires

a) S3200
b) FL320
c) 32000
d) F320

21. The parameter that determines the relationship between EAS and TAS is:

a) Pressure altitude.
b) Mach number.
c) OAT.
d) Density altitude.

22. The 'Black hole' phenomenon occurs during approaches at night and over water, jungle or desert. When the pilot is lacking visual cues other than those of the aerodrome there is an illusion of

a) Being too close, landing long
b) Climbing
c) Being too high and too far away, dropping low and landing short
d) Being too low, flying a steeper approach than normal

23. The thrust of a jet engine at constant RPM

a) Increases in proportion to the airspeed.

b) Is inversely proportional to the airspeed.

c) Is independent of the airspeed.

d) Does not change with changing altitude.

24. An AC generator driven by a CSD unit:

a) Does Not Need A Voltage Controller Since The Csd Will Ensure Constant Voltage.

b) Requires a voltage controller to maintain constant voltage under load.

c) Requires a voltage controller to maintain constant frequency.

d) Does Not Need A Voltage Controller Since An Ac Generator Voltage Cannot Alter Under Load.

25. Mass for individual passengers (to be carried on an aircraft) may be determined from a verbal statement by or on behalf of the passengers if the number of

a) Passengers carried is less than 6.

b) Passenger seats available is less than 20.

c) Passenger seats available is less than 10.

d) Passengers carried is less than 20.

26. What are the characteristics of the Bora?

a) It is a very cold wind that blows mainly in winter from a north-westerly direction in the Mediterranean

b) It is a warm and moist, south-westerly wind experienced in the eastern Mediterranean, that usually carries precipitation.

c) It is a cold and very strong wind that blows mainly in winter from a tableland (plateau) downwards to the Adriatic

d) It is a dry and hot southerly wind experienced in the Sahara desert, that often carries dust.

27. What is required if security personnel on board are to be armed?

a) Agreement with the destination State and inform the PI

b) Inform the police department at the destination airport.

c) Inform the police department at the destination airport. Notify PIC that the decision has been made to allow armed persons on board.

d) Agreement between State of departure and airport of arrival.

28. The message to an aeronautical ground station 'please call a taxi-cab for us. We will arrive at 1045' is:

a) A flight regularity message.
b) A flight safety messages.
c) An unauthorized message.
d) An urgency message.

29. What is the radiotelephony call sign for the aeronautical station providing approach control (no radar service)?

a) ARRIVAL
b) RADAR
c) APPROACH
d) CONTROL

30. . The operating mass of an aeroplane is:

a) The empty mass plus crew, crew baggage and catering.
b) The empty mass plus the take-off fuel mass.
c) The empty mass plus the trip fuel mass.
d) The dry operating mass plus the take-off fuel mass.

31. By the term "transit" of a heavenly body it is understood that:

a) The body is moving.
b) The body is passing the meridian of the observer or another specified meridian.
c) The body is passing the anti-meridian of the observer.
d) The body is at the same celestial as another body.

32. Refer to CAP697 Section 4 - MRJT1 Page 75 Figure 4.7.2 Area of Operation - Diversion Distance One Engine InoperativeUsing the above table, in ISA conditions and at a speed of M.70/280KIAS, in an elapsed time of 90 minutes an aircraft with mass at point of diversion 48000 kg could divert a distance of:

a) 563 NM
b) 603 NM
c) 584 NM
d) 608 NM[see Annex]

33. A VFR flight when flying inside an ATS airspace classified as C has to maintain the following minima of flight visibility and distance from clouds

a) 8 km at or above 3050 m (10.000 ft) AMSL 1500 m horizontal and 300 m vertical from clouds

b) 8 km at or above 3050 m (10.000 ft) AMSL, and clear of clouds

c) 5 NM at or above 3050 m (10.000 ft) AMSL, 1500 m horizontal and 300 m vertical from clouds

d) 5km at or above 3050 m (10.000 ft) AMSL 1500 m horizontal and 300 m vertical from clouds

34. CAS is obtained from IAS by correcting for the:

a) Density error.

b) Instrument error.

c) Position and density errors.

d) Position and instrument errors.

35. Which of the following factors determines the maximum flight altitude in the 'Buffet Onset Boundary' graph?

a) Service ceiling

b) Theoretical ceiling

c) Economy

d) Aerodynamics

36. What does the word 'contact' mean?

a) Radar contact established

b) Listen out on (frequency)

c) Establish radio contact with ...

d) That is correct

37. Given waypoint 1: 60°S 030°W and waypoint 2: 60°S 020°W, which have been inserted into INS connected to an autopilot, what will be the approximate latitude show on the display at longitude 025°W?

a) 60°11'S

b) 60°00'S

c) 60°06'S

d) 59°49'S

38. For three- and four-engined aeroplanes, the take-off alternate, if required, shall be located (in still air conditions) within:

a) 2 hours flight time at cruising speed with all engines operating.

b) 2 hours flight time at one-engine-inoperative cruising speed.

c) 1 hour flight time at cruising speed with all engines operating.

d) 1 hour flight time at one-engine-inoperative cruising speed.

39. An island appears 60° to the left of the centre line on an airborne weather radar display. What is the true bearing of the aircraft from the island if at the time of observation the aircraft was on a magnetic heading (MH) of 276° with the magnetic variation (VAR) 10°E?

a) 046°

b) 026°

c) 226°

d) 086°

40. A Primary radar operates on the principle of:

a) Phase comparison

b) Transponder interrogation

c) Continuous wave transmission

d) Timing the interval between the reception of sequential secondary radar pulses from the MLS station to the aircraft

41. When may the name of the location or the call sign suffix in the call sign of an aeronautical station be omitted ?

a) Only after the aeronautical station has used the abbreviated call sign

b) Never

c) In dense traffic during rush hours

d) When satisfactory communication has been established and provided it will not be confusing to do so

42. On hearing an urgency message a pilot shall:

a) Acknowledge the message immediately

b) Impose radio silence on the frequency in use

c) Monitor the frequency to offer assistance if required

d) Change the frequency, because radio silence will be imposed on the frequency in use

43. The azimuth transmitter of a Microwave Landing System (MLS) provides a fan-shaped horizontal approach zone which is usually:

a) + or - 40° of the runway centre-line

b) + or - 30° of the runway centre-line

c) + or - 60° of the runway centre-line

d) + or - 50° of the runway centre-line

44. An island appears 30° to the right of the centre line on an airborne weather radar display. What is the true bearing of the aircraft from the island if at the time of observation the aircraft was on a magnetic heading (MH) of 355° with the magnetic variation (VAR) 15°E?

a) 160°

b) 220°

c) 190°

d) 130°

45. Which part of an aeroplane provides the greatest positive contribution to the static longitudinal stability ?

a) The fuselage.

b) The engine.

c) The wing.

d) The horizontal tailplane.

46. The critical Mach number can be increased by

a) Sweepback of the wings.

b) An increase in wing aspect ratio.

c) A T-tail.

d) Positive dihedral of the wings.

47. The empty mass of an aeroplane is given as 44800 kg. Operational items (including crew standard mass of 1060 kg) are 2300 kg. If the maximum zero fuel mass is given as 65500 kg, the maximum traffic load which could be carried is:

a) 23000 kg

b) 20700 kg

c) 19460 kg.

d) 18400 kg

48. 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

49. Accident investigation, objectiveThe sole objective of the investigation of an accident or incident shall be the:

a) Prevention of accidents or incidents and to provide legal evidence for subsequent court cases.

b) Prevention of accidents or incidents and establish the liability.

c) Prevention of accidents or incidents and provide the manufacturer with investigation data for the improvement of the design.

d) Prevention of accidents or incidents.

50. What does 'Friction coefficient 20' in a runway report mean:

a) Braking action poor

b) Braking action unreliable

c) Braking action good

d) Braking action medium

51. Allowed traffic load is the difference between:

a) Allowed take off mass and basic empty mass.

b) Allowed take off mass and basic empty mass plus trip fuel.

c) Operating mass and basic empty mass.

d) Allowed take off mass and operating mass.

52. DOC 4444 (ICAO) establishes, that wake turbulence separation minima shall be based on a grouping of aircraft types into three categories according to the maximum certificated take- off mass.Heavy (H) Category, are all aircraft types of:

a) 135 000 Kg or more

b) Less than 136 000 Kg but more than 126 000 Kg

c) 136 000 Kg or more

d) 146 000 Kg or more

53. In ISA conditions, approximately what is the maximum theoretical range at which an aircraft at FL210 may expect to receive signals from a VOR facility sited 340 feet above mean sea level?

a) 245 NM

b) 204 NM

c) 183 NM

d) 352

54. With regard to the pneumatic mechanical devices which afford protection against the formation of ice, the only correct statement is:

a) The Pneumatic Mechanical Device Can Only Be Used As An Anti-icing Device.

b) The pneumatic mechanical device is used a lot on modern aircraft as it is inexpensive and easy to maintain.

c) The inflatable de-ice boots of the pneumatic mechanical device are arranged perpendicular to the leading edges.

d) The pneumatic mechanical device can only be used as a de-icing device.

55. The take-off mass of an aeroplane is 117 000 kg, comprising a traffic load of 18 000 kg and fuel of 46 000 kg. What is the dry operating mass?

a) 64 000 kg

b) 53 000 kg

c) 99 000 kg

d) 71 000 kg

56. Which signal indicates "Operations complete"?

a) N

b) LLL

c) NN

d) V

57. Which statement is correct for a side slip condition at constant speed and side slip angle, where the geometric dihedral of an aeroplane is increased ?

a) The required lateral control force does not change.

b) The required lateral control force decreases.

c) The stick force per g decreases.

d) The required lateral control force increases.

58. The two standard parallels of a conical Lambert projection are at N10°40'N and N41°20'. The cone constant of this chart is approximatively:

a) 0.44

b) 0.18

c) 0.66

d) 0.90

59. To comply with the approved airline Operations Manual in a twin-engine aircraft (1 h 45 min flight on 1 engine at an air speed of 420 KT to reach the alternate aerodromes in still air conditions), a pilot has to choose an ATC route, in Minimum Navigation Performance Specification area, while at the same time taking the shortest possible time.Given that the three alternate aerodromes taken into account are SHANNON, SANTA MARIA, ST JOHN TORBAY, the track to be chosen between PARIS and WASHINGTON will be:

a) Track A, time 8 h 3 min

b) Track D, time 8 h 20 min

c) Track C, time 8 h15 min

d) Track B, time 8 h 10 min[see Annex]

60. Which of the following signals is a distress signal?

a) The repeated switching on and off of the landing lights.

b) A parachute flare showing a red light.

c) In radiotelephony the spoken words PAN, PAN.

d) The repeated switching on and off of the navigation lights.

61. In the Airspace where the MNPS is applicable, the vertical separation that can be applied between FL 290 and FL410 inclusive is:

a) 1 000 ft

b) 1 500 ft

c) 2000ft

d) 500 ft

62. According to JAR-OPS 1, for aeroplanes with a maximum certificated take-off mass over 5700 kg, flight data recorders shall be capable of retaining the data recorded during at least the last:

a) 25 hours of operation.

b) 10 flights.

c) 25 flights.

d) 30 hours of operation.

63. Why is a secondary radar display screen free of storm clutter?

a) The principle of 'echo' return is not used in secondary radar

b) The frequencies employed are too low to give returns from moisture sources

c) A moving target indicator facility suppresses the display of static or near static returns

d) 2 and 4

64. ATIS broadcast messages containing departure and arrival information should include cloud cover, when the clouds are:

a) Below 900 m (3.000 ft) or below the highest minimum sector altitude, whichever is the greater

b) Below 1 500 m (5.000 ft) or below the highest minimum sector altitude, whichever is the greater

c) Cumulonimbus

d) Below 2 000 m (600 ft) or below the highest minimum sector altitude, whichever is the greater

65. VLE is defined as the:

a) Maximum flap extended speed.

b) Maximum speed at which the landing gear may be extended or retracted.

c) Maximum authorised speed.

d) Maximum landing gear extended speed.

66. maximum take-off mass is:

a) 4 200 kg

b) 4 100 kg

c) 4 700 kg

d) 4 300 kg

67. The CL - alpha curve of a positive cambered aerofoil intersects with the vertical axis of the CL- alpha graph:

a) Above the origin

b) Nowhere

c) Below the origin

d) In the origin

68. A cable operated flight control system can be equipped with external gust locks.

a) When fitted to the control surface, they will prevent movement of the control column if the Controls are not fitted with servo tabs.

b) They Will Prevent Movement Of A Servo Tab.

c) They Will Not Be Necessary Because Controls Are Irreversible And Cannot Be Moved By The Wind.

d) They Will Not Prevent Movement Of The Control Column.

69. Each member state should designate an appropriate authority with its administration to be responsible for the development implementation and maintenance of a national aviation security programme. This programme should apply:

a) Only to all international civil transport including aircraft engaged solely in the carriage of cargo

b) To all international civil air transport including aircraft engaged solely in the carriage of cargo and yet to domestic flights at the discretion of each member state

c) Only to passengers and aircrew in international civil transport flights and domestic flights

d) Only to passengers and aircrew in international civil transport flights

70. The Basic Empty Mass is 4960 kg, the Dry Operating Mass is 5220 kg and the Zero Fuel Mass is 6040 kg.If the take-off mass is 7630 kg the useful load is

a) 1590 kg

b) 2670 kg

c) 820 kg

d) 2410 kg

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Response Scheme

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

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

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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:
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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:		