Exam simulation

ATPL - Airline Transport Pilot Licence - Operational Procedures

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STUDENT NAME:	DATE AND TIME:

01. The boundary layer of a wing is:

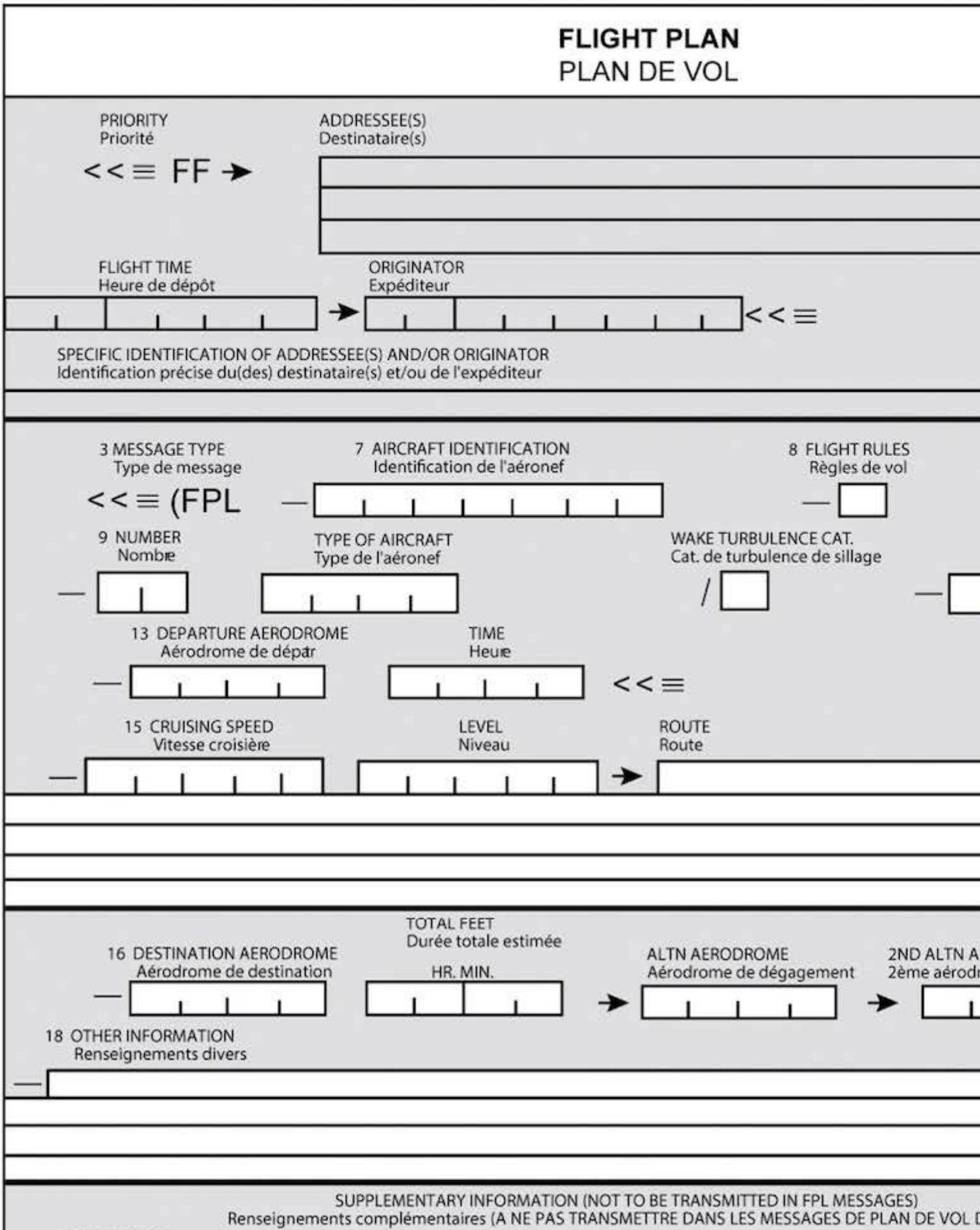
a) A turbulent flow around the wing

b) Created by the normal shock wave at transonic speeds

c) Caused by suction on the upper wing surface

d) A layer on the wing in which the stream velocity is lower than the free stream velocity

02. 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:


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
TOTAL FEET
Durée totale estimée
16 DESTINATION AERODROME
Aérodrome de destination
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

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

03. The two types of fatigue are:

a) Acute (short-term) fatigue and chronic (long-term) fatigue.
b) Heavy and light
c) Oppressive and negative
d) Short-term and oppressive

04. For a CAT aeroplane first issued with an individual CofA on or after 1 April 1998, the required FDR must automatically stop recording:

a) When the main gear shock strut compresses when touching the runway.
b) After the aeroplane is unable to move by its own power.
c) When the aeroplane clears the runway.
d) When the landing gear is extended and locked.

05. At the commencement of final approach, if the controller possesses wind information in the form of components, significant changes in the mean surface wind direction and speed shall be transmitted to aircraft. The mean tail-wind component significant change is:

a) 5 KT

b) 4 KT

c) 3 KT

d) 2 KT

06. By adding to the basic empty mass the following fixed necessary equipment for a specific flight (catering, safety and rescue equipment, fly away kit, crew), we get:

a) Zero fuel mass

b) Take-off mass

c) Landing mass

d) Dry operating mass

07. The two main design functions of Secondary Surveillance Radar (SSR) Mode S are:

a) Collision avoidance using TCAS II and improved long range (HF) communication capability.

b) Air to ground and ground to air data link communications and improved ATC aircraft surveillance capability

c) The elimination of ground to air communications and the introduction of automatic separation between aircraft using TCAS II

d) Continuous automatic position reporting using Global Positioning System (GPS) satellites and collision avoidance using TCAS II

08. The minimum number of hand fire-extinguishers to be located in the passenger compartment of an aircraft with a maximum approved passenger seating configuration of 31 is:

a) 3

b) 1

d) 2

09. Which listed outside-air temperature band most commonly favours clouds composed mainly of supercooled liquid-water droplets, creating the potential for conventional airframe icing?

a) +10°C to 0°C

b) -20°C to -35°C

c) 0°C to -10°C

d) -35°C to -50°C

10. During a flight to Europe scheduled in NAT HLA, you expect to cross the 30°W meridian at 0300 UTC. You will normally be:

a) Within the organised daytime track system.

b) Outside the validity period of the organised track system.

c) Within the organised night-time track system.

d) Within a polar track system.

11. The speed V2 is:

a) The lowest airspeed required to retract flaps without stall problems

b) That speed at which the PIC should decide to continue or not the take-off in the case of an engine failure

c) The lowest safety airspeed at which the aeroplane is under control with aerodynamic surfaces in the case of an engine failure

d) The take-off safety speed

12. The so-called 'Seat-of-the-Pants' sense is

a) Only to be used by experienced pilots with the permission to fly in IMC

b) Not suitable for spatial orientation when outside visual references are lost

c) The only sense a pilot can rely on, when flying in IMC

d) Useful for instrument and contact flight

13. A leak in the pitot total pressure line of a non-pressurized aircraft to an airspeed indicator would cause it to:

a) Over-read.

b) Indication will drop to zero.

c) Under-read.

d) Freeze on the value it indicated at the time of failure.

14. An aircraft remains parked with its altimeter setting unchanged. Shortly before a typical active cold-front passage, surface pressure falls. What happens to its indicated altitude?

a) It will remain unchanged.

b) It will be decreasing.

c) It will be increasing.

d) It will fluctuate up and down by about ± 50 feet.

15. Which of the following gives the best information about the progress of a flight between 2 en-route waypoints from a RNAV equipment?

a) ETO

b) Elapsed time on route

c) ATA

d) ETD

16. Which statement, in relation to the climb limited take-off mass of a jet aeroplane, is correct?

a) The climb limited take-off mass is determined at the speed for best rate of climb

b) The climb limited take-off mass decreases with increasing OAT

c) On high elevation airports equipped with long runways the aeroplane will always be climb limited

d) 50% of a headwind is taken into account when determining the climb limited take-off mass

17. An aircraft is 'homing' to a radio beacon whilst maintaining a relative bearing of zero. If the magnetic heading decreases, the aircraft is experiencing:

a) Zero drift

b) Left drift

c) A wind from the west

d) Right drift

18. The holdover time of an aircraft’s ground anti-icing treatment has been exceeded before take-off. Under the operator’s approved procedures, what action is required?

a) Apply directly anti-icing fluid without previous de-icing.

b) Arrange an approved pre-take-off contamination check or re-treatment. If re-treatment is necessary, remove the previous treatment’s residue and carry out a complete new de-icing/anti-icing treatment.

c) De-ice the aeroplane.

d) Operate the aeroplane de-icing/anti-icing systems.

19. The Vestibular Apparatus consists of the:

a) Eustachian tube and the semi-circular canals

b) The semicircular canals and the otolith organs, the utricle and saccule.

c) Eustachian tube and the pinna

d) Cochlea and the auditory nerve

20. Using the EASA training approximation for rotating-tyre dynamic hydroplaning spin-down speed, V (kt) = 9 × √p with p in psi, estimate V for 8 bar. Use 1 bar = 14.5038 psi and round to the nearest knot.

a) 127 kt.

b) 97 kt.

c) 83 kt.

d) 25 kt.

21. What does the word "WILCO" mean?

a) I read you fine.

b) I understand your message and will comply with it.

c) I have received all of your last transmission.

d) As communication is difficult, I will call you later.

22. An air mass acquires its basic properties

a) By the influence of jet streams

b) By stagnation of the air for a long period of time over areas having particular characteristics

c) In the westerlies of the mid-latitudes

d) By widespread thunderstorms

23. How should a pilot respond to suspected chronic stress that may affect safe flight performance?

a) Use moderate administration of tranquillizers before flight.

b) Seek appropriate medical advice, assess fitness to fly and address the stressors and recovery needs; do not fly while safe performance is impaired.

c) Always consult a psycho-therapist before the next flight.

d) Ignore the particular stressors and increase your physical exercises.

24. For a jet aeroplane, in the simplified model where available thrust is approximately constant with airspeed, maximum climb angle in still air occurs at the speed corresponding to:

a) 1.2 Vs

b) The maximum CL/CD^2 ratio

c) 1.1 Vs

d) The maximum CL/CD ratio

25. To increase the critical Mach number a conventional aerofoil should

a) Be used with a high angle of attack.

b) Have a large camber.

c) Have a large leading edge radius.

d) Have a low thickness to chord ratio.

26. Visual Flight Rules. Above an altitude of 10000 ft, flights operating within airspace Class 'G' in accordance with VFR shall observe the following weather minima:

a) A distance from cloud: 1500 m horizontally, 1000 ft vertically, flight visibility: 8 km.

b) A distance from cloud: 1 Nautical Mile (NM) horizontally, 1000 ft vertically, flight visibility: 8 km.

c) A distance from cloud: 1 Nautical Mile (NM) horizontally, 1000 ft vertically, flight visibility: 5 km.

d) A distance from cloud: 1500 m horizontally, 1000 ft vertically, flight visibility: 5 km.

27. Given: TAS = 485 kt, True HDG = 226°,W/V = 110°(T)/95kt. Calculate the drift angle and GS?

a) 7°R - 531 kt

b) 9°R - 433 kt

c) 9°R - 533 kt

d) 8°L - 435 kt

28. For a turbofan with flat-rated maximum take-off thrust, which statement best describes the limiting regime as ambient temperature rises through the flat-rating temperature?

a) Below the flat-rating temperature, icing protection always sets the maximum thrust

b) Above the flat-rating temperature, brake-energy limits determine the engine thrust rating

c) Flat rating guarantees the same maximum thrust at every ambient temperature

d) Below the flat-rating temperature, the rating caps available thrust; above it, engine temperature limits reduce the available maximum thrust

29. During a VFR flight at a navigational checkpoint the remaining usable fuel in tanks is 60 US gallons. The reserve fuel is 12 US gallons. According to the flight plan the remaining flight time is 1h35min. Calculate the highest acceptable rate of consumption possible for the rest of the trip.

a) 33.0 US gallons/hour

b) 30.3 US gallons/hour

c) 21.3 US gallons/hour

d) 37.9 US gallons/hour

30. Smoke entering the flight deck threatens the operating pilots’ breathing and vision. Which listed action provides immediate personal protection before system troubleshooting, in accordance with the aircraft’s smoke procedures?

a) Use the flight-crew oxygen masks at the prescribed smoke setting and eye protection as required.

b) Cut off all air conditioning units.

c) Determine which system is causing the smoke.

d) Begin an emergency descent.

31. The indicated range from a DME station is:

a) 0 when passing overhead the station.

b) Ground range.

c) Ground range only if the beacon is co-located with VOR.

d) Slant range.

32. Given are:- Maximum structural take-off mass: 72 000 kg- Maximum structural landing mass: 56 000 kg- Maximum zero fuel mass: 48 000 kg- Taxi fuel: 800 kg- Trip fuel: 18 000 kg- Contingency fuel: 900 kg- Alternate fuel: 700 kg- Final reserve fuel: 2 000 kg. The actual take-off mass can never be higher than:

a) 69 600 kg

b) 70 400 kg

c) 72 000 kg

d) 74 000 kg

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

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

34. The altimeter consists of one or several aneroid capsules located in a sealed casing. The pressures in the aneroid capsule (i) and casing (ii) are respectively:

a) (i) static pressure at time t (ii) static pressure at time t - dt

b) (i) total pressure (ii) static pressure

c) (i) vacuum (or a very low pressure) (ii) static pressure

d) (i) static pressure (ii) total pressure

35. A static converter is powered by:

a) Direct current on input, direct current on output.

b) Alternating current on input, alternating current on output.

c) Alternating current on input, direct current on output.

d) Direct current on input, alternating current output.

36. A pilot wishes to turn right on to a southerly heading with 20° bank at a latitude of 20° North. Using a direct reading compass, in order to achieve this he must stop the turn on an approximate heading of:

a) 170°

b) 150°

c) 200°

d) 190°

37. How many feet you have to climb to reach FL 75? Given: FL 75 departure aerodrome elevation 1500' QNH = 1023 hPa temperature = ISA 1 hPa = 30'

a) 6000'

b) 6300'

c) 7800'

d) 5700'

38. If the centre of gravity is near the forward limit the aeroplane will:

a) Benefit from reduced drag due to the decrease in angle of attack.

b) Require less power for a given airspeed.

c) Require elevator trim which will result in an increase in fuel consumption.

d) Tend to over rotate during take-off.

39. In the northern hemisphere, during a take-off run in a westerly direction, a direct reading magnetic compass indicates:

a) An apparent turn to the north.

b) An apparent turn to the south.

c) No apparent turn.

d) An apparent turn to approximately the heading 255°.

40. Which statement about altitude hypoxia when breathing ambient air is correct?

a) Its effects always begin only between 3,000 and 5,000 m.

b) It cannot affect any healthy person below 5,000 m.

c) Its effects always begin only between 5,000 and 7,000 m.

d) There is no universally safe threshold: susceptibility varies, and night vision may deteriorate at altitudes below 3,000 m.

41. Where is the most dangerous zone in a tropical revolving storm?

a) In the wall of clouds around the eye.

b) About 600 km away from the eye.

c) In the centre of the eye.

d) Anywhere in the eye.

42. Under Commission Delegated Regulation (EU) 2020/723, a professional flight crew licence issued by a third country may initially be validated for use on aircraft registered in an EASA Member State:

a) For an unlimited period, provided that the basic licence remains valid

b) For a period not exceeding one year, even if the basic licence has expired

c) At the discretion of the authority of the Member State concerned for a period not exceeding one year, provided that the basic licence remains valid

d) At the discretion of the authority of the Member State concerned for a period not exceeding two years, provided that the basic licence remains valid

43. When planned fuel jettison is necessary, which listed operating approach is appropriate, subject to the aircraft’s approved procedure and the urgency of the situation?

a) Perform jettison below FL50 regardless of terrain, weather or ATC coordination.

b) Coordinate the route, altitude and weather conditions with ATC and apply the approved procedure while maintaining terrain clearance and separation from other traffic.

c) Always wait until final approach, even if doing so delays the necessary response to an emergency.

d) Enter a holding stack and jettison fuel behind another aeroplane without coordinating with ATC.

44. Given SHA VOR/DME (N5243.3 W00853.1), variation 8°W, radial 120° and distance 35 NM, what is the aircraft position?

a) N5225 W00805

b) N5300 W00945

c) N5250 W00950

d) N5230 W00800

45. Disturbance of the biological clock appears after a: 1. bad night's sleep 2. day flight Amsterdam - New York 3. day flight Amsterdam - Johannesburg 4. night flight New York - Amsterdam

a) 2 and 4 are correct

b) 1,2,3 and 4 are correct

c) 1 and 3 are correct

d) 1,2 and 3 are correct

46. Which of the following sets of conditions are most favourable to the development of thunderstorms?

a) Extensive isothermal layer, ice particles and water droplets must exist just below the freezing level and orographic lifting.

b) Environmental lapse rate less than saturated adiabatic lapse rate with dew point below 0°C and considerable surface heating.

c) Environmental lapse rate greater than saturated adiabatic lapse rate through a great vertical extent, high relative humidity and an initial lifting process.

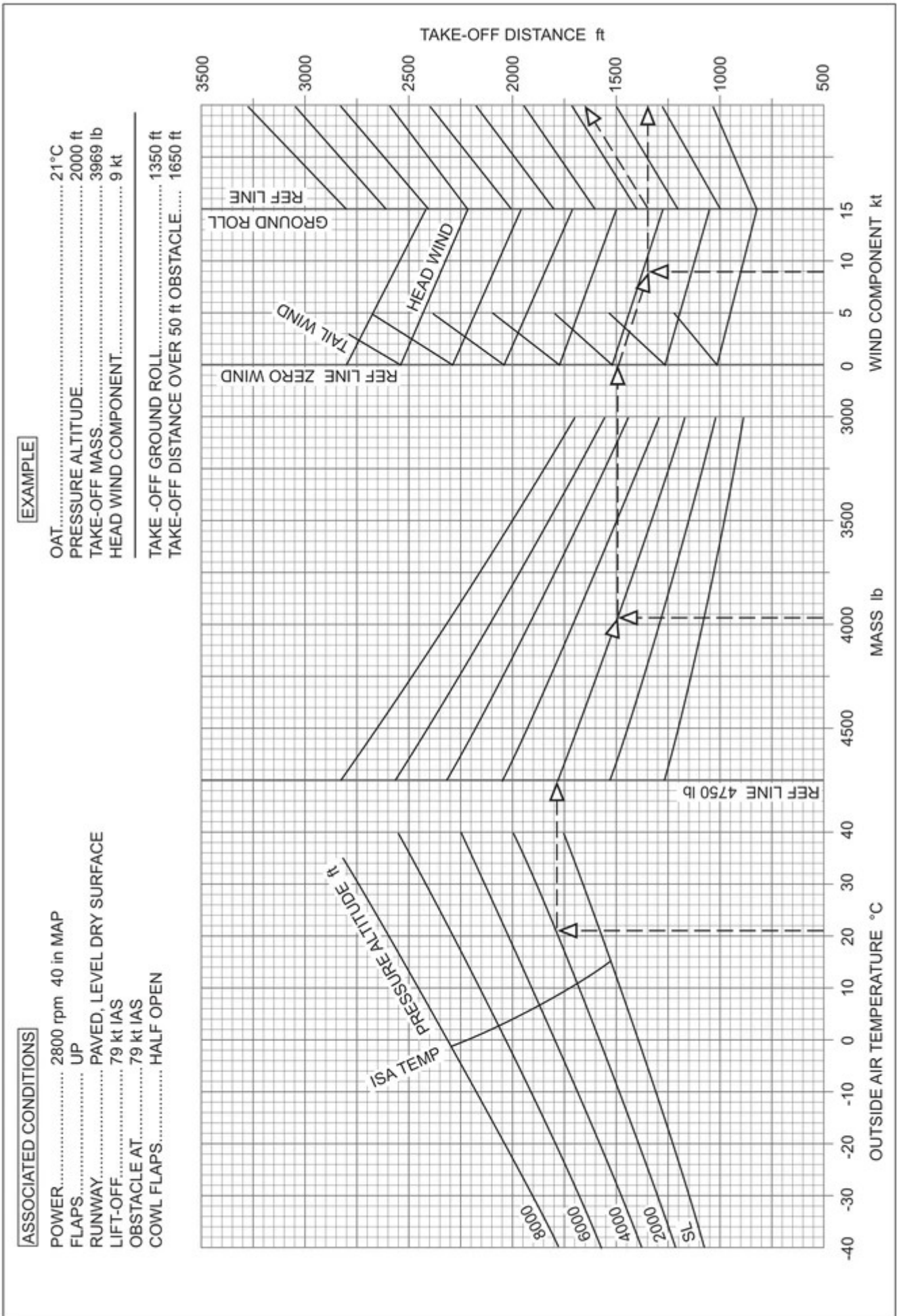
d) Environmental lapse rate less than dry adiabatic lapse rate with freezing level below the cloud base, high relative humidity and strong surface winds.

47. Refer to Performance Manual MEP1 Figure 3.1 Normal Procedure Given: OAT 24 °C; Pressure Altitude: 3000'; RWY 12L; Wind 080/12 KT; Take-off Mass: 3800 lbs. Other conditions as associated in the header of the graph. What is the take-off distance over a 50 ft obstacle?

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TAKE-OFF DISTANCE ft
3500
3000
2500
2000
1500
1000
500
REF LINE
GROUND ROLL
HEAD WIND
TAIL WIND
REF LINE ZERO WIND
WIND COMPONENT kt
15
10
5
0
3000
3500
4000
4500
MASS lb
REF LINE 4750 lb
PRESSURE ALTITUDE ft
ISA TEMP
8000
6000
4000
2000
SL
40
30
20
10
0
-10
-20
-30
-40
OUTSIDE AIR TEMPERATURE °C
EXAMPLE
OAT..... 21°C
PRESSURE ALTITUDE..... 2000 ft
TAKE-OFF MASS..... 3969 lb
HEAD WIND COMPONENT..... 9 kt
TAKE -OFF GROUND ROLL..... 1350 ft
TAKE-OFF DISTANCE OVER 50 ft OBSTACLE..... 1650 ft
ASSOCIATED CONDITIONS
POWER..... 2800 rpm 40 in MAP
FLAPS..... UP
RUNWAY..... PAVED, LEVEL DRY SURFACE
LIFT-OFF..... 79 kt IAS
OBSTACLE AT..... 79 kt IAS
COWL FLAPS..... HALF OPEN

a) 1950 ft
b) 1420 ft
c) 1600 ft
d) 1700 ft

48. When completing an ATC flight plan for a flight commencing under IFR but possibly changing to VFR, the letters entered in Item 8 (FLIGHT RULES) would be:

a) G
b) N/S
c) X
d) Y

49. To be able to predict compressibility effects you have to determine the:

a) Mach Number
b) IAS
c) TAS
d) EAS

50. Under EASA guidance, passenger mass may be established from a verbal statement by or on behalf of each passenger, with the prescribed allowances for clothing and hand baggage, when the number of passenger seats available in an aeroplane is:

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.

51. When climbing at a constant Mach number:

a) CAS decreases.
b) Difference between surrounding conditions and standard atmosphere must be known to deduce the CAS variation.
c) CAS remains constant.
d) CAS increases.

52. Which statement is correct about the laminar and turbulent boundary layer:

a) Friction drag will be equal in both types of layers
b) Friction drag is lower in the laminar layer
c) Separation point will occur earlier in the turbulent layer
d) Friction drag is lower in the turbulent layer

53. Which factor determines the maximum flight altitude represented by buffet onset boundary data?

a) Service ceiling
b) Theoretical ceiling
c) Economy
d) Aerodynamics

54. Which forces are balanced with geostrophic winds?

a) Friction force, Pressure gradient force, Coriolis force.
b) Pressure gradient force, Coriolis force.
c) Pressure gradient force, Centrifugal force, Friction force.
d) Pressure gradient force, Coriolis force, Centrifugal force.

55. One of the waste products of the metabolic process in the cell is:

a) Sugar
b) Protein
c) Fat
d) Carbon dioxide

56. In certain conditions V2 can be limited by VMCA:

a) Low take-off mass, small flap extension, low field elevation
b) High take-off mass, large flap extension, low field elevation
c) Low take-off mass, large flap extension, low field elevation
d) High take-off mass, small flap extension, high field elevation

57. 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) Rho1 < rho2
b) Rho1 > rho2
c) Rho1 = rho2
d) The density depends on the change of the tube area

58. Which statement best defines glaucoma?

a) A group of eye diseases that damage the optic nerve and can cause visual field loss; eye pressure may be high or normal.

b) Disturbed night vision

c) Disturbed adaptation

d) Disturbed colour vision

59. At flight level and mach number constant, if OAT decreases, the CAS:

a) Decreases.

b) Increases.

c) Decreases if OAT is lower than standard temperature, increases in the opposite case.

d) Remains constant.

60. Which speed provides maximum obstacle clearance during climb?

a) V2 + 10 KT

b) The speed for which the ratio between rate of climb and forward speed is maximum

c) V2

d) The speed for maximum rate of climb

61. Divergence in the upper air results, near the surface, in:

a) Rising pressure and likely formation of clouds

b) Rising pressure and likely dissipation of clouds

c) Falling pressure and likely formation of clouds

d) Falling pressure and likely dissipation of clouds

62. For conventional pulsed radar using a single fixed PRF without ambiguity-resolution techniques, the pulse recurrence frequency determines:

a) The range resolution set by the transmitted pulse width.

b) Minimum range

c) The maximum unambiguous range before echoes can be associated with the wrong transmitted pulse.

d) Beam width

63. The barometric compensator of an altimeter is locked on reference 1013.2 hPa. The aircraft has to land on a point with an elevation of 290 feet where the QNH is 1023 hPa. The reading on the altimeter on the ground will be:

a) 20 FT.

b) 560 FT.

c) -10 FT.

d) 11 FT.

64. According to the UK CAA long-grass policy guidance, which of these habitat-management approaches can reduce attraction to hazardous birds when suitable for local species and conditions?

a) An area liable to flooding

b) Edible rubbish

c) Short gang-mown grass

d) Maintain a dense, upright, weed-free long-grass sward, with appropriate specialist management and local risk assessment.

65. The height of the marks on the fuselage (or equivalent structure) and on the vertical tail surfaces of heavier than air aircraft shall be:

a) At least 40 centimetres

b) At least 20 centimetres

c) At least 30 centimetres

d) At least between 20 centimetres and 40 centimetres

66. How does aircraft airspeed affect the net thrust of a jet engine at a constant rotational-speed setting?

a) It changes the inlet conditions and ram drag; the resulting net thrust is engine-dependent and is not generally proportional to airspeed

b) Is inversely proportional to the airspeed.

c) Is independent of the airspeed.

d) Does not change with changing altitude.

67. For a pressurised aeroplane, certificated to fly above 25 000 ft, all occupants of flight deck seats on flight deck duty shall be supplied with supplemental oxygen during a period in any case no less than:

a) 2 hours

b) 10 minutes

c) 1 hour

d) 30 minutes

68. A flight benefits from a strong tail wind which was not forecast. On arrival at destination a straight in approach and immediate landing clearance is given. The landing mass will be higher than planned and

a) The landing distance will be unaffected.

b) The landing distance required will be longer.

c) The approach path will be steeper and threshold speed higher.

d) The approach path will be steeper.

69. The Maximum Taxi (Ramp) Mass is governed by:

a) Tyre speed and temperature limitations.

b) Structural considerations.

c) Taxi distance to take-off point.

d) Bearing strength of the taxiway pavement.

70. Which statement best describes the width of a tornado’s damage path?

a) About 2 to 6 km

b) Only a few metres

c) In the order of 10 km

d) It varies greatly: many paths are tens to hundreds of metres wide, while some exceed 1 km.

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Response Scheme

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

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

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