Exam simulation

ATPL - Airline Transport Pilot license - Aircraft General Knowledge - Instrumentation

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STUDENT NAME:	DATE AND TIME:

01. In order to indicate unlawful interference with the planned operation of the flight, the aircraft Secondary Surveillance Radar (SSR) transponder should be selected to:

a) 7600
b) 7500
c) 7000
d) 7700

02. When asked by ATC 'ARE YOU ABLE TO MAINTAIN FL80?' the correct reply contains the word:

a) AFFIRM or NEGATIVE
b) WILCO
c) CLEARED
d) ROGER

03. The main purpose of a turbocharger is to:

a) Provide a leaner mixture at sea level.
b) Reduce the fuel flow.
c) Provide a richer mixture at high altitudes
d) Maintain power with increasing altitude.

04. Generally, when the fire handle of the fire-extinguishing system on an aircraft is pulled, the effects are 1. closing of the LP valve of the fuel system 2. opening of the air bleed valves and HP valves on the engine concerned 3. setting of extinguishing systems 4. closing of the isolation and de-icing valves 5. isolation of the associated electric current generators 6. immediate discharge of extinguishing agent. The combination regrouping all the correct statements is:

a) 1, 2, 5, 6
b) 2, 3, 4, 5
c) 1, 3, 4, 5
d) 1, 3, 4

05. When the weather conditions require an alternate aerodrome to be available on take-off, the latter shall be located, for aircraft with three or more engines, at an equivalent distance not exceeding:

a) 2 hours of flight time at cruising speed

b) 1 hour of flight time at single engine cruising speed

c) 2 hours of flight time at one-engine-inoperative cruising speed

d) 1 hour of flight time at cruising speed

06. In the event of engine failure below V1, the first action to be taken by the pilot in order to decelerate the aeroplane is to:

a) Apply wheel brakes

b) Reverse engine thrust

c) Deploy airbrakes or spoilers

d) Reduce the engine thrust

07. What is the shortest distance in a sequence for landing between a 'Heavy' aircraft preceding a 'Light' aircraft

a) 6 NM

b) 10 km

c) 2 km

d) 3 NM

08. An IFR aircraft in controlled airspace experiences complete radio communication failure after departure. Which action is the current general priority?

a) Set transponder Code 7600 and follow any published radio communication failure procedure, or the applicable rules and last acknowledged clearance if no specific procedure applies.

b) Always maintain the last assigned level for exactly 3 minutes and then climb according to the flight plan.

c) Immediately climb to the planned cruising level in every case.

d) Return to the departure aerodrome in every case.

09. The long range cruise speed is in relation to the speed for maximum range cruise.

a) Lower

b) Higher

c) Depending on density altitude and mass

d) Depending on the OAT and net mass

10. Passenger A has passed through security and meets passenger B who has not been through security. What should be the subsequent procedure?

a) Both passengers to pass through security.

b) Passenger A to pass through security again.

c) Passenger B to pass through security.

d) Both passengers and their luggage to pass through security.

11. What type of front / occlusion usually moves the fastest?

a) Cold front.

b) Warm occlusion.

c) Cold occlusion.

d) Warm front.

12. An aeroplane is to depart from an airfield where the performance limited take-off mass is 89200 kg. Certificated maximum masses are as follows: Ramp (taxi) mass 89930 kg Maximum Take-off mass 89430 kg Maximum Landing mass 71520 kg Actual Zero fuel mass 62050 kg Fuel on board at ramp: Taxi fuel 600 kg Trip fuel 17830 kg. Contingency, final reserve and alternate 9030 kg. If the Dry Operating Mass is 40970 kg the traffic load that can be carried on this flight is

a) 21500 kg

b) 21080 kg

c) 20870 kg

d) 21220 kg

13. Under which of the following circumstances shall an aircraft station squawk 7600?

a) When entering bad weather areas

b) In case of radio communication failure

c) When flying over desert areas

d) When approaching a prohibited area

14. Following in-flight depressurisation, a turbine powered aeroplane is forced to divert to an en-route alternate airfield. If actual flight conditions are as forecast, the minimum quantity of fuel remaining on arrival at the airfield will be:

a) Laid down by the operator, with the quantity being specified in the operating manual

b) At least equivalent to the quantity required to fly to another aerodrome in the event that weather conditions so require

c) At least equivalent to 45 minutes flying time

d) At least equivalent to 30 minutes flying time

15. Given: Airport elevation is 1000 ft. QNH is 988 hPa. What is the approximate airport pressure altitude? (Assume 1 hPa = 27 FT)

a) 320 FT

b) 680 FT

c) 1680 FT

d) - 320 FT

16. Which one of the following statements is correct concerning the movement of the ITCZ in the region of West Africa?

a) It reaches its maximum northerly position of 15° - 20° N in July

b) It oscillates during the year between the Equator and 10 degrees North.

c) It oscillates during the year between 10 degrees North and 10 degrees South.

d) It reaches its maximum southerly position of 5° S in January

17. When an aircraft station is unable to establish communication due to receiver failure, the following procedure should be undertaken:

a) Transmit at regular times or positions, the phrase 'Transmitting blind due to receiver failure'.

b) Change to frequency 121.5 MHz and squawk 7700.

c) Transmit reports at scheduled times or positions, preceded by the phrase 'Transmitting blind due to receiver failure'.

d) Land at the nearest uncontrolled airfield.

18. In the Flight Management Computer (FMC) of the Flight Management System (FMS), data relating to cruising speeds is stored in the:

a) Air data computer
b) Navigation database
c) Performance database
d) Auto flight computers

19. The operator must ensure that the information contained in the aircraft technical log is stored for a minimum period of:

a) 24 months
b) 3 months
c) 12 months
d) 36 months

20. Floating due to ground effect during an approach to land will occur:

a) When the height is less than half of the length of the wing span above the surface
b) At a speed approaching the stall
c) When a higher than normal angle of attack is used
d) When the height is less than twice the length of the wing span above the surface

21. Approach procedures - Arrival and approach segments. In an instrument approach procedure, the segment in which alignment and descent for landing are made is called:

a) Intermediate approach segment.
b) Initial approach segment.
c) Arrival segment.
d) Final approach segment.

22. The correct drag formula is:

a) D = CD 1/2 rho V S
b) D = CD 2 rho V^2 S
c) D = CD 1/2 * 1/rho * V^2 S
d) D = CD 1/2 rho V^2 S

23. Action plans (SOP's) in a cockpit must:

a) Be tailored to the individual pilot's needs in order to facilitate the normal operation of the aircraft

b) Be shared by the members of the crew and updated at each modification in order to maintain maximum synergy

c) Only follow the manufacturers proposals and not reflect individual operators cockpit philosophies

d) Only be tailored to the type of aircraft, regardless of current MCC procedures

24. Given: true HDG = 145°, TAS = 240 kt, Track (T) = 150°, GS = 210 kt. Calculate the W/V?

a) 360/35kt

b) 115/35kt

c) 295/35kt

d) 180/35kt

25. The procedure to be followed in the event of decompression when flying above 10,000 ft must:

a) Allow for the rapid supply of oxygen in order to prevent hypoxia

b) Make it possible to eliminate the risk of fogging due to the sudden pressure changes

c) Make it possible to prevent hyperventilation owing to the inhalation of 100 % oxygen

d) Allow for a rapid descent independent from sufficient supply of oxygen in order to prevent disorders due to hypoxia

26. What does the term 'air-ground communication' mean?

a) One-way communication from aircraft to stations or locations on the surface of the earth

b) One-way communication from stations or locations on the surface of the earth

c) Two-way communication between aircraft and stations or locations on the surface of the earth

d) Any communication from aircraft to ground station requiring handling by the Aeronautical Fixed Telecommunication Network (AFTN)

27. The purpose of a chip detector in the oil system of an engine/gearbox is to indicate that:

a) The seals are worn.

b) The piston rings are worn.

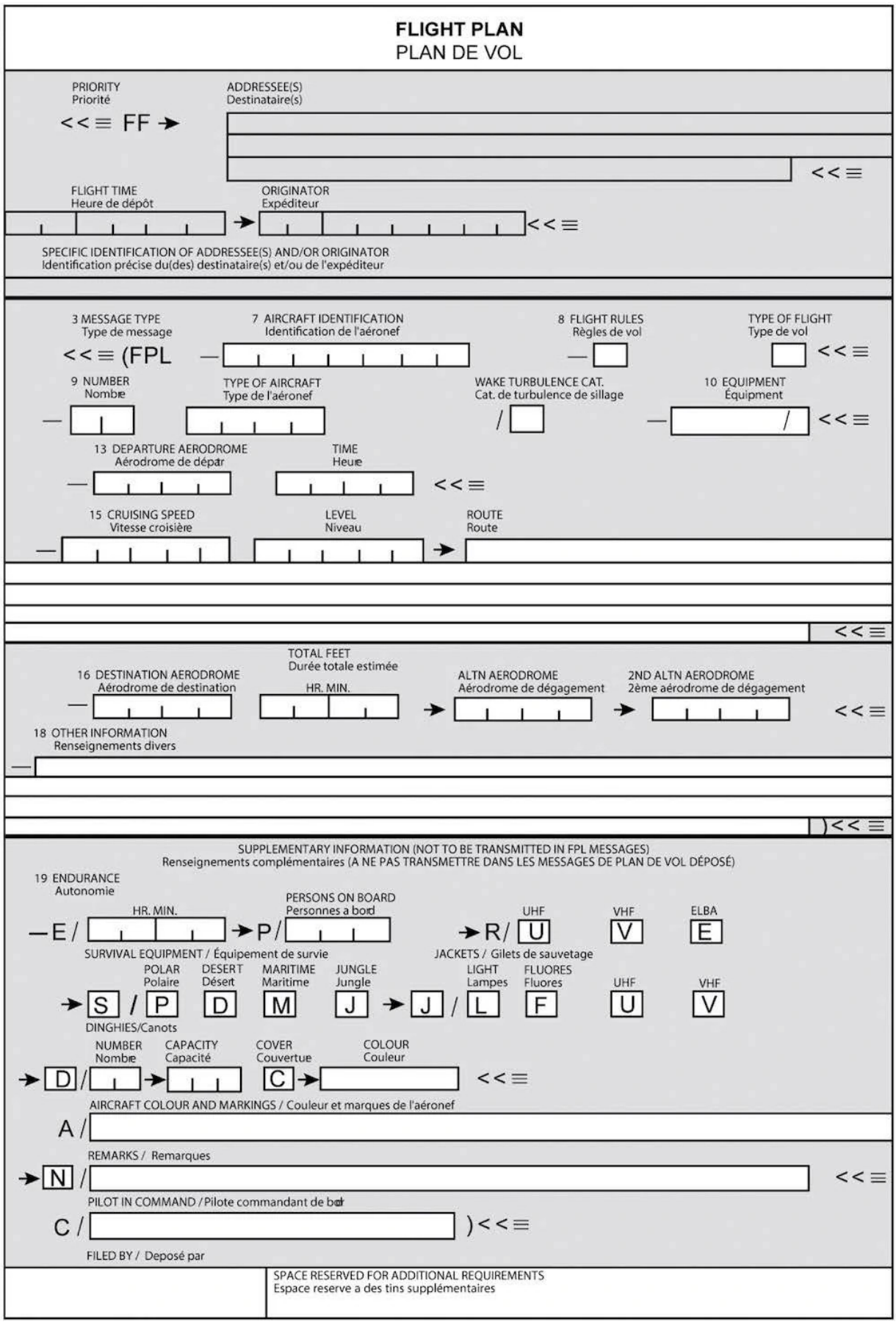
c) The oil temperature is too high.

d) There are metal particles in the oil.

28. What is the radiotelephony call sign suffix for the aeronautical station indicating clearance delivery?

a) CLEARANCE
b) DELIVERY
c) RADIO
d) CLEARANCE DELIVERY

29. For the purposes of Item 9 (Wake turbulence category) of the ATC flight plan, an aircraft with a maximum certificated take-off mass of 62000 kg is:


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
TYPE OF FLIGHT
Type de vol
<< ≡
9 NUMBER
Nombre
TYPE OF AIRCRAFT
Type de l'aéronef
WAKE TURBULENCE CAT.
Cat. de turbulence de sillage
10 EQUIPMENT
Équipment
<< ≡
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 AERODROME
2ème aérodrome de dégagement
<< ≡
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 DÉPOSÉ)
19 ENDURANCE
Autonomie
HR. MIN.
PERSONS ON BOARD
Personnes a bord
UHF
VHF
ELBA
—E/
→P/
→R/ U V E
SURVIVAL EQUIPMENT / Équipement de survie
JACKETS / Gilets de sauvetage
POLAR
Polaire
DESERT
Désert
MARITIME
Maritime
JUNGLE
Jungle
LIGHT
Lampes
FLUORES
Fluores
UHF
VHF
→S / P D M J → J / L F U V
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 fins supplémentaires

a) Heavy 'H'
b) Light 'L'
c) Medium 'M'
d) Unclassified 'U'

30. The term 'useful load' as applied to an aircraft includes

a) Traffic load plus usable fuel.
b) The revenue-earning portion of traffic load plus useable fuel.
c) The revenue-earning portion of traffic load only.
d) Traffic load only.

31. In the event of the re-use of Selective Availability, how does this affect, if at all, the navigation accuracy of the NAVSTAR/GPS satellite navigation system?

a) It has no influence because, by selecting of the most suitable signals, the computing process in the receiver is quicker
b) It increases because only signals from satellites in the most suitable geometric constellation are selected by the receiver
c) It degrades accuracy by reducing the number of available satellites
d) It degrades position accuracy by manipulating satellite signals

32. On a polar stereographic chart the scale at the pole is 1:5.000.000. Calculate the scale of the chart at 65°N:

a) 1:4.766.000
b) 1:5.250.000
c) 1:5.000.000
d) 1:4.213.000

33. What does the word 'wilco' mean?

a) I read you five

b) I have received all of your last transmission

c) As communication is difficult, I will call you later

d) I understand your message and will comply with it

34. The one engine out take-off run is the distance between the brake release point and:

a) The lift-off point

b) The point where V2 is reached

c) The middle of the segment between VLOF point and 35 ft point

d) The point half way between V1 and V2

35. How do you understand the statement 'one cannot not communicate'?

a) You cannot influence your own communication.

b) Each situation requires communication.

c) The statement above is a misprint.

d) Being silent as well as inactive are nonverbal behaviour patterns which express a meaning.

36. What data may be obtained from buffet onset boundary data?

a) The values of Mcrit at different weights and altitudes

b) The values of MMO at different weights and altitudes

c) The values of the Mach Number at which low speed and shock-stall occur at different weights and altitudes

d) The values of the Mach Number at which low speed and Mach Buffet occur at different weights and altitudes

37. The age of an applicant for a commercial pilot licence shall not be less than:

a) 17 years of age

b) 21 years of age

c) 16 years of age

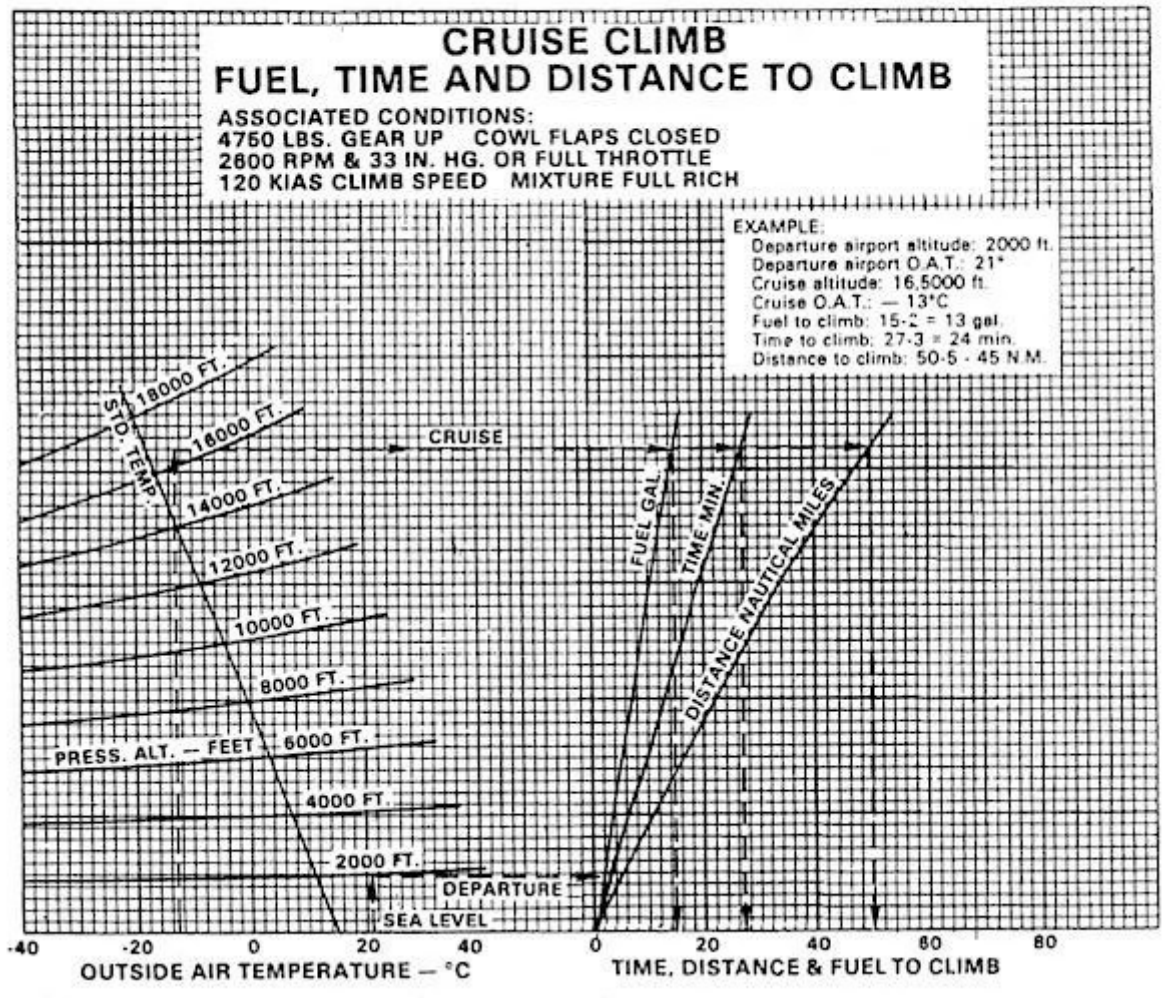
d) 18 years of age

38. Refer to Performance Manual MEP1 Figure 3.1 Normal Procedure Given: OAT 24 °C; Pressure Altitude: 3000 ft; RWY 30R; Wind 060/04 KT; Take-off Mass: 3800 lbs. Other conditions as associated in the header of the graph. What is the Ground Roll Distance under the conditions given?

CIVIL AVIATION AUTHORITY
FLIGHT PLANNING & MONITORING

DATA SHEET
MEP1

Figure 3. 1 CLIMB



a) 1670 ft
b) 2000 ft
c) 1780 ft
d) 2150 ft

39. A TCAS II (Traffic Collision Avoidance System) provides:

a) A simple intruding aeroplane proximity warning.

b) The intruder relative position and possibly an indication of a collision avoidance manoeuvre within the vertical plane only.

c) The intruder relative position and possibly an indication of a collision avoidance manoeuvre within the horizontal plane only.

d) The intruder relative position and possibly an indication of a collision avoidance manoeuvre within both the vertical and horizontal planes.

40. The weight of an aircraft, which is in level non accelerated flight, is said to act

a) Vertically through the centre of pressure.

b) Vertically through the centre of gravity.

c) Always along the vertical axis of the aircraft.

d) Vertically through the datum point.

41. A Stand-by-horizon or emergency attitude indicator:

a) Is automatically connected to the primary vertical gyro if the alternator fails

b) Is fully independent of external energy resources in an emergency situation

c) Contains its own separate gyro

d) Only works if there is a complete electrical failure

42. On the QDR of 075° (in the vicinity of the station) with a magnetic heading of 295°, the relative bearing on the ADF indicator is:

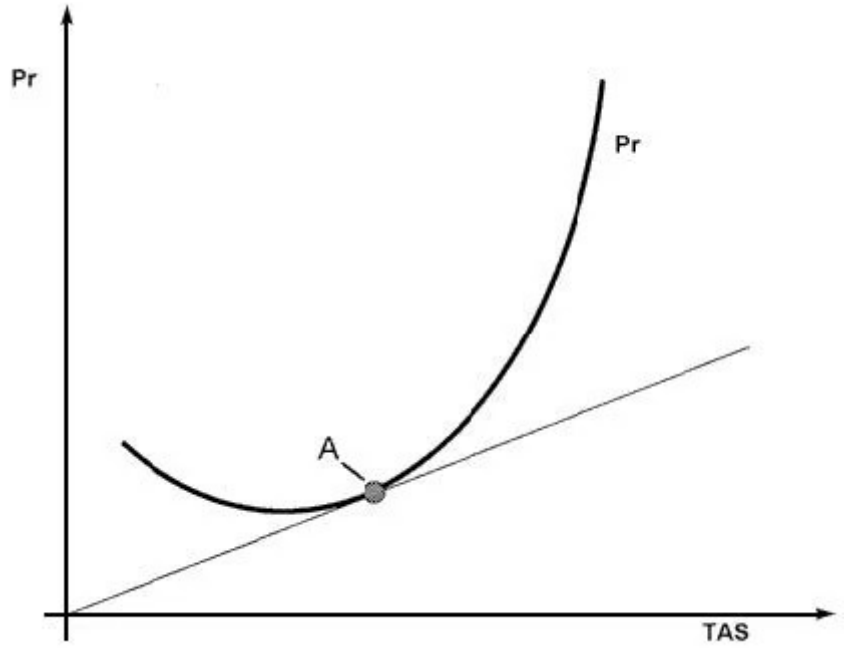
a) 320°

b) 220°

c) 040°

d) 140°

43. Consider the graphic representation of the power required versus true air speed (TAS), for a piston engine aeroplane with a given mass. When drawing the tangent from the origin, the point of contact (A) determines the speed of:



a) Maximum specific range
b) Critical angle of attack
c) Maximum thrust
d) Maximum endurance

44. The velocity maximum operating (VMO) is a speed expressed in:

a) Equivalent airspeed (EAS).
b) True airspeed (TAS).
c) Calibrated airspeed (CAS).
d) Mach number (M).

45. Which of the following statements concerning the lifting of a parcel of air is correct?

a) Unsaturated parcels cool more rapidly than saturated parcels
b) Saturated parcels always cool at a rate of 0.65°C per 100m
c) Unsaturated parcels cool at a rate of 0.65°C per 100m
d) Unsaturated parcels cool less rapidly than saturated parcels

46. The distress message shall contain as many as possible of the following elements/details:

a) Aircraft call sign, route of flight, destination airport
b) Aircraft call sign, aerodrome of departure, position and level
c) Aircraft call sign, nature of distress, pilot's intention, present position, level and heading
d) Aircraft call sign, present position, assistance required

47. Concerning the capacity of the human long-term memory

a) It is structurally limited in terms of storage capacity, but unlimited in terms of storage time
b) It is structurally limited in terms of storage time but not in terms of capacity
c) Its storage capacity is unlimited
d) Its mode of storing information is passive, making memory searches effective

48. Which combination of circumstances or conditions would most likely lead to a tyre speed limited take-off?

a) A high runway elevation and tailwind
b) A low runway elevation and a headwind
c) A high runway elevation and a headwind
d) A low runway elevation and a cross wind

49. The principle of a laser gyro is based on:

a) A gyroscope associated with a laser compensating for gimballing errors.
b) A gyroscope associated with a laser compensating for apparent wander due to the rotation of the earth.
c) Two rotating cavities provided with mirrors.
d) Frequency difference between two laser beams rotating in opposite direction.

50. Below 70,000 ft., what gas makes up the major part of the atmosphere?

a) Oxygen
b) Nitrogen
c) Ozone
d) Carbon dioxide

51. Which of the following combinations basically has an effect on the angle of descent in a glide? (Ignore compressibility effects.)

a) Configuration and angle of attack
b) Configuration and mass
c) Altitude and configuration
d) Mass and altitude

52. According to PART-FCL, successful completion of a multi-crew cooperation (MCC) training course shall be required to:

a) Obtain a professional pilot licence.
b) Obtain the first class rating on multi-engine aeroplanes.
c) Revalidate any rating or licence.
d) Obtain the first type rating on multi-pilot aeroplanes.

53. The rate and depth of breathing is primarily controlled by:

a) The amount of carbon dioxide in the blood
b) The total atmospheric pressure
c) The amount of nitrogen in the blood
d) The amount of carbon monoxide in the blood

54. A volumetric top off valve on small aircraft typically works on the principle of:

a) Flow rate sensors.
b) Pressure sensors.
c) Capacitive sensing systems.
d) Float switches.

55. The fuel supply system on a jet engine includes a fuel heating device, upstream of the main fuel filter so as to:

a) Prevent, at low fuel temperature, the risk of ice formation from water contained in the fuel.
b) Prevent fuel from freezing in fuel pipes due to low temperatures at high altitude.
c) Ease low pressure pumps work by increasing fuel fluidity.
d) Maintain and improve fuel heating power.

56. In civil aviation, the height value computed by the receiver of the satellite navigation system NAVSTAR/GPS is the:

a) Height above the WGS-84 ellipsoid

b) Flight level

c) Height above Mean Sea Level (MSL)

d) Geometric height above ground

57. In order to meet wake turbulence criteria, for arriving aircraft and using timed approaches, what minima shall be applied to aircraft landing behind a heavy or a medium aircraft?

a) Medium aircraft other medium aircraft - 2 minutes

b) Medium aircraft behind heavy aircraft - 2 minutes

c) Medium aircraft behind heavy aircraft - 3 minutes

d) Light aircraft behind medium aircraft -4 minutes

58. The advantages of a chemical oxygen source for the passenger cabin are 1. reduced weight and volume, 2. easy storage and maintenance, 3. greater autonomy, 4. no risk of explosion,5. reversible functioning, 6. no maintenance. The combination regrouping all the correct statements is:

a) 2, 3, 5

b) 1, 2, 3, 4, 5, 6

c) 1, 3, 4, 5

d) 1, 2, 4, 6

59. Please check the following statements: 1. A stressor causes activation 2. Activation stimulates a person to cope with it

a) 1 is correct, 2 is not correct

b) 1 and 2 are both correct

c) 1 and 2 are both not correct

d) 1 is not correct, 2 is correct

60. What positions are connected by isobars on the surface weather chart?

a) Positions with the same air pressure at a given level

b) Positions with the same relative pressure heights

c) Positions with the same wind velocity at a given level

d) Positions with the same temperature at a given level

61. An aircraft in the northern hemisphere makes an accurate rate one turn to the right. If the initial heading was 330°, after 30 seconds of the turn the direct reading magnetic compass should read:

a) Less than 060°.

b) More or less than 060° depending on the pendulous suspension used.

c) 060°.

d) More than 060°.

62. The nominal scale of a Lambert conformal conic chart is the:

a) Mean scale between pole and equator

b) Mean scale between the parallels of the secant cone

c) Scale at the standard parallels

d) Scale at the equator

63. Barotrauma caused by gas accumulation in the stomach and intestines can lead to:

a) Barotitis

b) Pressure pain or flatulence

c) Barosinusitis

d) Decompression sickness

64. The flight data recorder must stop automatically to record the data:

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.

65. For a jet aeroplane, the maximum climb angle is achieved at a speed corresponding to:

a) 1.2 Vs

b) The maximum CL/CD^2 ratio

c) 1.1 Vs

d) The maximum CL/CD ratio

66. Following an explosive decompression, the maximum altitude without oxygen supply at which flight crew efficiency is not impaired is:

a) 14000 ft

b) 25000 ft

c) 2500 ft

d) 8000 ft

67. During the retraction of the flaps at a constant angle of attack the aeroplane starts to (all other factors of importance being constant):

a) Climb

b) Bank

c) Yaw

d) Sink suddenly

68. When the term 'CAVOK' is used in an aviation routine weather report (METAR), the values of visibility and clouds are:

a) Visibility 10 km or more, no clouds below 5000 feet/GND

b) Visibility more than 5000 m, no clouds below 1500 m/GND

c) Visibility more than 8 km, no clouds below 3000 feet/GND

d) Visibility 10 km or more, no clouds below 1500 feet/GND

69. Fastair 345 is instructed to contact Stephenville RADAR on channel 132.010 MHz. How would Fastair 345 advise RADAR that it is not 8.33 kHz equipped?

a) Negative eight point three three

b) Negative on 132.008

c) Negative channel 132.0083

d) Negative frequency 132.010

70. An aeroplane is cruising at FL 220. The auto-throttle maintains a constant CAS. If the OAT decreases, the Mach number:

a) Remains constant.

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

c) Decreases.

d) Increases.

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Response Scheme

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

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

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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:		