Exam simulation

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

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STUDENT NAME:	DATE AND TIME:

01. According to PART-FCL, an applicant for ATPL(A) shall have demonstrated the ability to perform as pilot-in-command, the procedures and manoeuvres of an aeroplane type certificated for:

a) The carriage of passengers at night.
b) A minimum crew of two pilots plus a flight engineer.
c) A minimum crew of two pilots under IFR
d) Operations by pilots under training.

02. Which of the following lists contain aeroplane design features that all increase static lateral stability?

a) High wing, sweep back, large and high vertical fin.
b) Sweep back, under wing mounted engines, winglets.
c) Fuselage mounted engines, dihedral, T-tail.
d) Low wing, dihedral, elliptical wing planform.

03. The most likely place to encounter clear air turbulence associated with a jet stream is

a) Well below the core
b) On the tropical side of the core
c) Close to the core on the side facing the polar air
d) 5000 feet or more above the core

04. In a ditching situation, except for infants, the passengers shall be instructed to inflate their life jackets:

a) As soon as ditching is prepared.
b) Immediately on the opening of the exits.
c) When exiting the aircraft.
d) Immediately on ditching.

05. 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

06. The pendulum type detector system of the directional gyro feeds:

a) A torque motor on the sensitive axis

b) A nozzle integral with the outer gimbal ring

c) 2 torque motors arranged horizontally

d) A levelling erection torque motor

07. The point at which a tangent out of the origin touches the power required curve

a) Is the point where Drag coefficient is a minimum.

b) Is the point where the Lift to Drag ratio is a minimum.

c) Is the point where the Lift to Drag ratio is a maximum.

d) Is the maximum drag speed.

08. Lights indicating the possible need for future corrective action must be:

a) Red.

b) Amber.

c) Magenta.

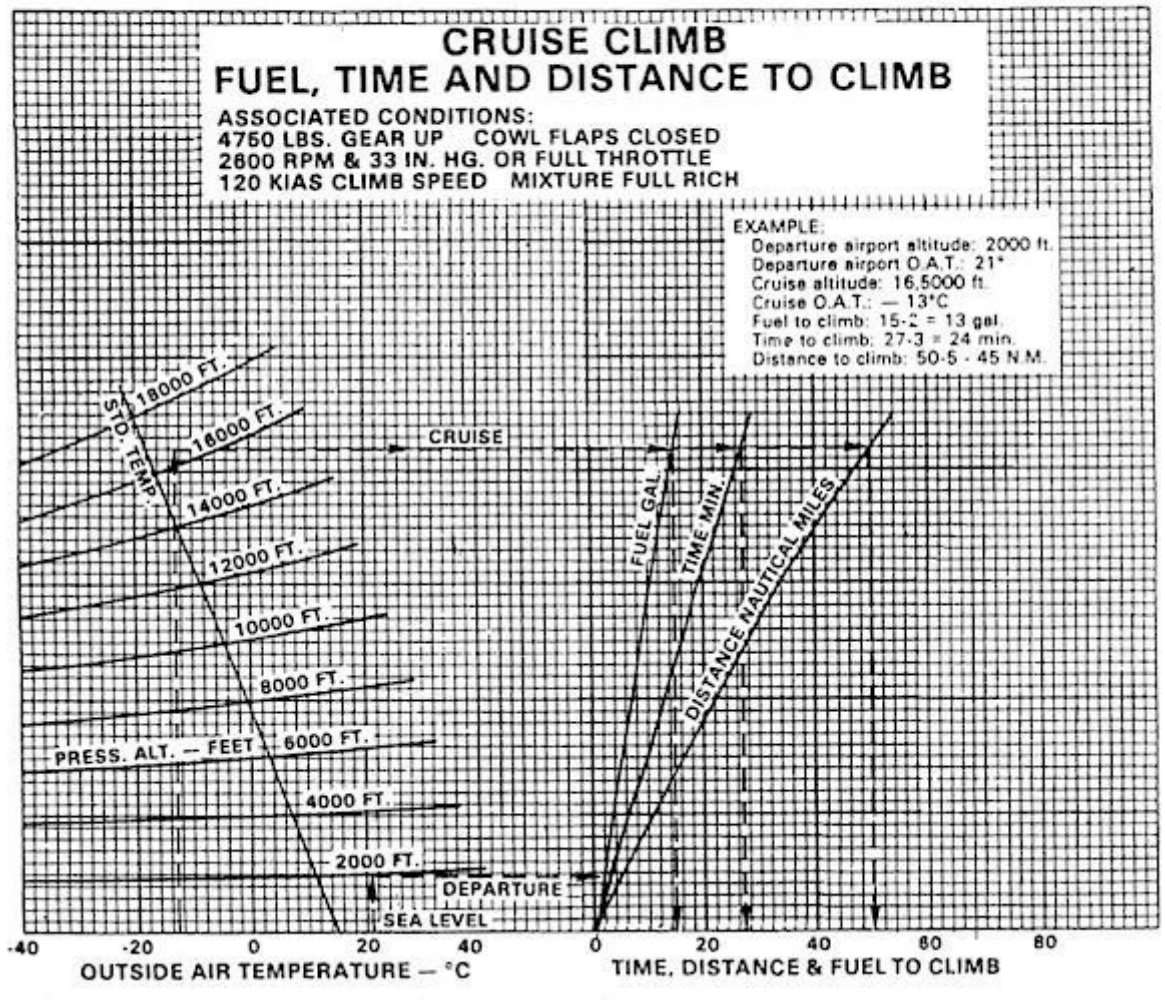
d) Red and white striped.

09. Refer to CAP698 Section 3 - MEP1 Figure 3.1 Normal Procedure Given:OAT 24 °CPressure Altitude: 3000 ft RWY 30RWind· 060/04 KTTake-off Mass: 3800 lbsOther 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

10. Which phrase shall be used if you want to say: "Communication is difficult. Please send every word or group of words twice"?

a) Say again, say again

b) Repeat twice

c) Words twice

d) Message second time

11. The environmental lapse rate in an actual atmosphere

a) Has a fixed value of 0.65°C/100m

b) Has a fixed value of 1°C/100m

c) Has a fixed value of 2°C/1000 FT

d) Varies with time

12. Which elements of instructions or information shall always be read back ?

a) Runway-in-use, altimeter settings, SSR codes, level instructions, heading and speed instructions

b) Time check, runway-in-use, altimeter settings, level instructions, SSR codes

c) Surface wind, visibility, ground temperature, runway-in-use, altimeter settings, heading and speed instructions

d) Runway-in-use, visibility, surface wind, heading instructions, altimeter settings

13. What does the word 'Monitor' mean:

a) Wait and I will call you

b) Establish radio contact with...

c) Listen out on (frequency).

d) Examine a system or procedure

14. Flights immediately after SCUBA-diving (compressed gas mixtures, bottles) (>10 m depth)

a) Can be performed without any danger

b) Are allowed, if 38000 FT are not exceeded

c) Are forbidden

d) Should be avoided because hypoxia may develop

15. Before transmitting the pilot should...:

a) Always write the message and read it during the transmission

b) Make sure that the aircraft is levelled off

c) Make sure that the emergency frequency is tuned in at the same time

d) Listen out on the frequency to ensure no interference with another station already transmitting will occur

16. The tropopause is lower

a) South of the equator than north of it

b) In summer than winter in moderate latitudes

c) Over the equator than over the South Pole

d) Over the North Pole than over the equator

17. 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 kgThe 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

18. The convention which deals with offences against penal law, is

a) The convention of Rome

b) The convention of Warsaw

c) The convention of Madrid

d) The convention of Tokyo

19. In order to measure the radial from a VOR, the aircraft VOR receiver

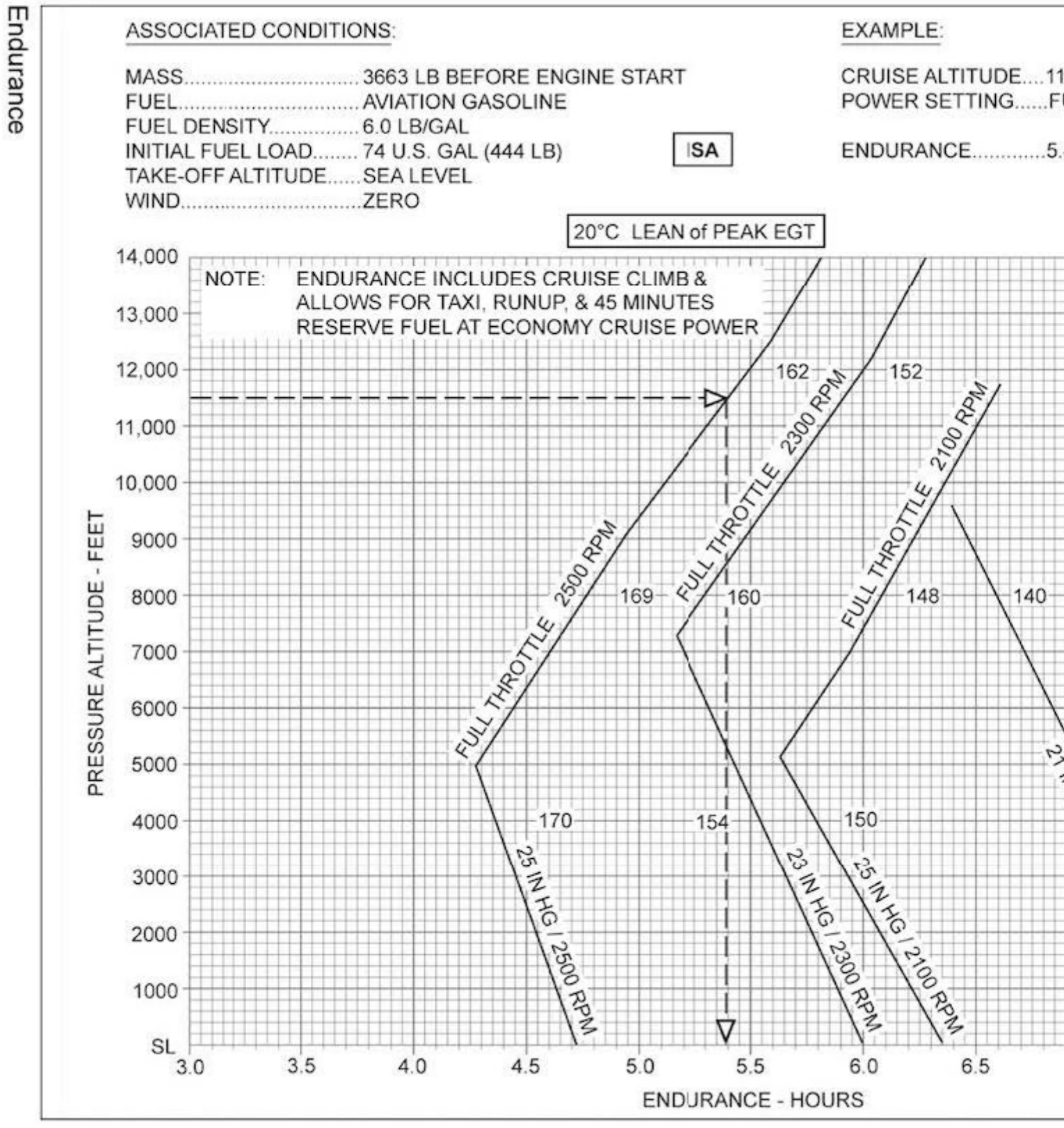
a) Measures the time difference between reception of the two signals transmitted from the ground installation.

b) Measures the phase difference between the reference phase and the variable phase of the signal.

c) Measures the time difference between sending the interrogation signal and receiving the transponder signal.

d) Uses pulse technique to determine the radial.

20. See Flight Planning Manual SEP 1 Figure 2.5.Given: FL 75, Lean mixture, Full throttle, 2300 RPM. Take-off fuel: 444 lbs, Endurance in hours and minutes.



a) 05 hours 12 minutes
b) 05 hours 23 minutes
c) 04 hours 42 minutes
d) 05 hours 20 minutes

21. If Paris reports a wind of 30012KT on the METAR, what wind velocity would you expect to encounter at a height of 2000 feet above the ground ?

a) 33025KT
b) 23030KT
c) 27020KT
d) 30025KT

22. The maintenance of man's internal equilibrium is called:

a) Homeostasis
b) Poikilothermy
c) Homeothermy
d) Heterostasis

23. What does the abbreviation 'FIR' mean?

a) Flight information required.
b) Flight information region.
c) Flight information radar.
d) Flow information received.

24. Under which condition should you fly considerably lower (4 000 ft or more) than the optimum altitude ?

a) If the maximum altitude is below the optimum altitude.
b) If at the lower altitude either considerably less headwind or considerably more tailwind can be expected.
c) If at the lower altitude either more headwind or less tailwind can be expected.
d) If the temperature is lower at the low altitude (high altitude inversion).

25. What are the main factors which bring about reduced or low vigilance (hypovigilance) ?1. The monotony of the task2. Tiredness and the need for sleep3. A lack of stimulation4. Excessive stress

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

26. 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.

27. Between which latitudes are you most likely to find the region of travelling low pressure systems during summer?

a) 25° - 45°

b) 15° - 25°

c) 45° - 70°

d) 10° - 15°

28. When power assisted controls are used for pitch control:

a) Trimming is superfluous.

b) A part of the aerodynamic forces is still felt on the column.

c) They only function in combination with an elevator trim tab.

d) Aerodynamic balancing of the control surfaces is meaningless.

29. In the 'VASIS' , how many light units are in each wing bar?

a) 3.

b) 5.

c) 4.

d) 2.

30. The tolerance value used to determine that mode C derived level information displayed to the controller is accurate shall be:

a) +/- 250 ft.

b) +/- 200 ft.

c) +/- 500 ft.

d) +/- 300 ft.

31. Aircraft told to contact Stephenville Radar on 132.010. Response if unable to comply:

a) Negative channel 132.010

b) Negative frequency 132.008

c) Negative 8 point 3 3

d) Negative on 132.010

32. 1. Psychosomatic means that a physiological problem is followed by psychological stress.2. Psychosomatic complaints hardly occur in professional aviation because of the strict selection for this particular profession .

a) 1 and 2 are both not correct

b) 1 is not correct 2 is correct

c) 1 is correct 2 is not correct

d) 1 and 2 are both correct

33. A wide body takes off on a clear night in Dhahran, Saudi Arabia. Shortly after take off the aircraft's rate of climb drops to zero. This can be due to

a) A very strong temperature inversion

b) Low relative humidity

c) Very pronounced downdrafts

d) Sand/dust in the engines

34. In an area of converging air

a) Stratified clouds can be dissolved

b) Convective clouds can be dissolved

c) Clouds can not be formed

d) Clouds can be formed

35. When an ATC flight plan is submitted for a flight outside designated ATS routes, points included in Item 15 (route) should not normally be at intervals of more than:

a) 20 minutes flying time or 150 km

b) 15 minutes flying time or 100 km

c) 30 minutes flying time or 370 km

d) 1 hour flying time or 500 km

36. An aircraft squawking 7700 indicates to the ground station that:

a) The aircraft's transceiver is unserviceable.
b) The aircraft is in distress.
c) The aircraft is being hijacked.
d) There is a sick passenger on board.

37. During a climb at a constant IAS, the Mach Number:

a) Decrease initially and increase subsequently.
b) Remain constant.
c) Increase.
d) Increase initially and remain constant subsequently.

38. What approximate rate of descent is required in order to maintain a 3° glidepath at a groundspeed of 90 kt?

a) 450 FT/MIN
b) 700 FT/MIN
c) 600 FT/MIN
d) Stop the loop rotation

39. What is the most significant difference between an equatorial jet stream and all the other jet streams ?

a) Wind direction.
b) Wind speed.
c) Horizontal dimension.
d) Vertical dimension.

40. What does the abbreviation 'RVR' mean:

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

41. Which phrase shall be used if you want to say: 'Yes':

a) Yes

b) Affirm

c) Affirmative

d) Roger

42. Which of the following will reduce induced drag?

a) Low aspect ratio

b) Elliptical lift distribution

c) Extending the flaps

d) Flying at high angles of attack

43. Except in special circumstances determined by the public authorities concerned, when a passenger is passing through the territory of a Contracting State and has to stay in that Contracting State until the next flight for lack of facilities or any other circumstances, the Contracting State where the international airport is located shall permit such a passenger to remain within its territory without requiring visas prior to the arrival when:

a) The passenger is to leave that State within two (2) weeks from the day of his (her) arrival.

b) The passenger is to leave that State within two (2) days from the day of his (her) arrival.

c) The passenger is to leave that State within one (1) day from the day of his (her) arrival.

d) The passenger is to leave that State within 72 (seventy two) hours from the time of arrival of that passenger.

44. 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

45. A stress reaction is:

a) The specific response of the body to demands placed on a person
b) The non-specific response of the body to demands placed on a person
c) The specific stimuli causing a human body to respond
d) The non-specific stimuli causing a human body to respond

46. What is the correct way to transmit and read back frequency 120.375 MHz (VHF channel separated by 25 KHz):

a) One two zero decimal three seven five
b) One twenty decimal three seven
c) One two zero three seven
d) One two zero decimal three seven

47. 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

48. Must a 'general call' be acknowledged'?

a) Yes, from all stations in the sequence they have been addressed
b) Yes, but only from the station first called
c) Yes, from all stations in a random sequence
d) No

49. The OBS is set to 235°. The indications of the VOR are half full scale deflection left and 'to'. The aircraft is on the radial:

a) 230°
b) 050°
c) 240°
d) 100 NM

50. The two types of fatigue are:

a) Chronic short-term and acute

b) Heavy and light

c) Oppressive and negative

d) Short-term and oppressive

51. Which of the following is correct regarding the range of an NDB?

a) Aircraft height is not limiting for the reception of signals from the N

b) The transmitter power of the NDB station has no effect on the range.

c) The range of an NDB will most likely increase at day time compared to night time.

d) The range is limited to the line of sight.

52. In a primary radar using pulse technique, pulse length determines:

a) Target discrimination

b) Maximum measurable range

c) Minimum measurable range

d) 2

53. The maximum floor loading for a cargo compartment in an aircraft is given as 750 kg per square metre. A package with a mass of 600 kg is to be loaded. Assuming the pallet base is entirely in contact with the floor, which of the following is the minimum size pallet that can be used?

a) 40 cm by 200 cm

b) 40 cm by 300 cm

c) 30 cm by 200 cm

d) 30 cm by 300 cm

54. Which of these statements about a gust lock system are correct or incorrect? 1) There should be suitable design precautions to prevent flight with the gust lock engaged. 2) There is no need for a gust lock on reversible flight controls.

a) 1) Is Correct, 2) Is Correct.

b) 1) Is Incorrect, 2) Is Incorrect.

c) 1) Is Incorrect, 2) Is Correct.

d) 1) is correct, 2) is incorrect.

55. How does relative humidity and the dewpoint in an unsaturated air mass change with varying temperature?

a) When temperature increases, the relative humidity increases, and the dewpoint decreases.

b) When temperature increases, the relative humidity decreases, and the dewpoint remains constant.

c) When temperature decreases, the relative humidity and the dewpoint remain constant.

d) When temperature decreases, the relative humidity decreases, and the dewpoint increases.

56. An aircraft flying at FL 45 (OAT 6°C) obtains a reading of 1860 ft on its radio altimeter (ground elevation 3090 ft). What is the value of the QNH, to the nearest hPa, at that point?

a) 1030

b) 1042

c) 1013

d) 996

57. What are the propagation characteristics of VHF:

a) Practically straight-line similar to light waves

b) Similar to short waves with practically no atmospheric disturbance

c) The waves travel along the surface of the earth and penetrate into valleys in a way that topographical obstacles have no influence

d) The waves are reflected at the ionosphere at the height of about 100 km and reach the earth surface in the form of sky-waves

58. If no ICAO identifier has been attributed to an alternate airport (box 1 6) of a flight plan form...

a) Write XXXX in box 16 and indicate in box 18 (additional information) ALTN/followed by the name of the airport

b) Write ZZZZ in box 16 and indicate in box 18 (additional information) ALTN/followed by the name of the airport.

c) Write ZZZZ in box 16 and indicate in box 18 (additional information) DEGT/followed by the name of the airport.

d) Write XXXX in box 16 and indicate in box 18 (additional information) DEGT/followed by the name of the airport

59. On a dry runway the accelerate stop distance is increased:

a) By headwind

b) By uphill slope

c) By a lower take-off mass because the aeroplane accelerates faster to V1

d) By low outside air temperature

60. A load placed aft of the datum:

a) Has a negative arm and therefore generates a negative moment and mass

b) Has a negative arm and therefore generates a negative moment but a positive mass

c) Has a positive arm and therefore generates a positive moment

d) Has a positive arm and therefore generates a positive moment but negative mass

61. With regard to the humidity of air in current in a pressurized cabin, we know that it:-1: varies between 40 and 60%-2: varies between 5 and 15%-3: may cause dehydration effecting the performance of the crew-4: has no special effects on crew members

a) 1,3

b) 2,3

c) 1,4

d) 2,3,4

62. "Kilometer" is defined as:

a) The mean length of a 1/40 000 part of the equator.

b) A 1/10 000 part of the meridian from the equator to the pole.

c) 0,621 NM.

d) 0,454 SM.

63. In an Airborne Weather Radar that has a colour cathode ray tube (CRT) increasing severity of rain and turbulence is generally shown by a change of colour from:

a) Green to yellow to red

b) Yellow to orange to red

c) Green to red to black

d) The frequencies employed are too high to give returns from moisture sources

64. An aircraft is instructed to hold short of the runway-in-use. What is the correct phraseology to indicate it will follow this instruction ?

a) Roger

b) Will stop before

c) Holding short

d) Wilco

65. An aeroplane whose maximum approved passenger seating configuration is 7 to 30 seats must be equipped with at least:

a) 2 hand fire-extinguishers conveniently located in the passenger compartment.

b) 3 hand fire-extinguishers conveniently located in the passenger compartment.

c) 1 hand fire-extinguisher conveniently located in the passenger compartment.

d) 4 hand fire-extinguishers conveniently located in the passenger compartment.

66. The empty mass of an aircraft is recorded in

a) The loading manifest. It differs from Dry Operating Mass by the value of the 'useful load'.

b) The weighing schedule. If changes occur, due to modifications, the aircraft must be re-weighed always.

c) The loading manifest. It differs from the zero fuel mass by the value of the 'traffic load'.

d) The weighing schedule and is amended to take account of changes due to modifications of the aircraft.

67. Which one of the following is an advantages of a multi-sensor system using inputs from a global navigation satellite system (GNSS) and an inertial navigational system (INS)?

a) The average position calculated from data provided by both systems increases overall accuracy

b) The activation of 'Selective Availability' can be recognised by the INS

c) The only advantage of coupling both systems is double redundancy

d) 18

68. The lift coefficient (CL) of an aeroplane in steady horizontal flight is 0.42. An increase in angle of attack of 1 degree increases CL by 0.1. A vertical up gust instantly changes the angle of attack by 3 degrees. The load factor will be:

a) 0.74

b) 1.71

c) 2.49

d) 1.49

69. During a transoceanic and polar flight, the chart precession is a rotation in degrees, for a moving aircraft, of the gyro North with respect to the:

a) True North for a given chart

b) Grid North for any chart

c) True North for any chart

d) Grid North for a given chart

70. According to ICAO Doc 8168, a noise abatement departure procedure is NOT to be initiated at less than:

a) 1 000 ft above aerodrome elevation

b) 800 ft above aerodrome elevation

c) 2 000 ft above aerodrome elevation

d) 1 500 ft above aerodrome elevation

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Response Scheme

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

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

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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:
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29:	30:	31:	32:
33:	34:	35:	36:
37:	38:	39:	40:
41:	42:	43:	44:
45:	46:	47:	48:
49:	50:	51:	52:
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57:	58:	59:	60:
61:	62:	63:	64:
65:	66:	67:	68:
69:	70:		