Exam simulation

ATPL - Airline Transport Pilot license - Radio Navigation

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STUDENT NAME:	DATE AND TIME:

01. Raising the sensory threshold of a sensory organ means:

a) A greater sensitivity
b) A lesser sensitivity
c) A lesser selectivity
d) A greater selectivity

02. In the event of a conflict, the TCAS II (Traffic Collision alert and Avoidance System) presents warnings to the crew such as:

a) 'Too low terrain'
b) 'Turn left' or 'Turn right'
c) 'Glide Slope'
d) 'Climb' or 'Descent'

03. A category III B precision approach (CAT III B) is an approach which may be carried out with a runway visual range of at least:

a) 150 m
b) 75 m
c) 200 m
d) 250 m

04. Which abbreviation is used for the term 'control zone'?

a) CZ
b) CTZ
c) CTR
d) CTA

05. Please check the following statements: 1. Psychosomatic means that mental and/or emotional stressors can be manifested in organic stress reactions. 2. Psychosomatic means that a physical problem is always followed by psychological stress.

a) 1 is correct, 2 is false

b) 1 and 2 are both false

c) 1 is false, 2 is correct

d) 1 and 2 are both correct

06. An aeroplane flies from A (59°S 142°W) to B (61°S 148°W) with a TAS of 480 KT. The autopilot is engaged and coupled with an Inertial Navigation System in which AB track is active. On route AB, the true track:

a) Increases by 5°

b) Varies by 4°

c) Decreases by 6°

d) Varies by 10°

07. After engine failure the aeroplane is unable to maintain its cruising altitude. What is the procedure which should be followed?

a) ETOPS.

b) Emergency Descent Procedure.

c) Long Range Cruise Descent.

d) Drift Down Procedure.

08. When flying in cold air (colder than standard atmosphere), the altimeter will:

a) Underestimate

b) Be just as correct as before

c) Overestimate

d) Show the actual height above ground

09. The take-off mass of an aeroplane is 141000 kg. Total fuel on board is 63000 kg including 14000 kg reserve fuel and 1000 kg of unusable fuel. The traffic load is 12800 kg. The zero fuel mass is:

a) 79000 kg

b) 65200 kg.

c) 93000 kg

d) 78000 kg

10. For a twin-engine aeroplane, non ETOPS, the take-off alternate, if required, shall be located (in still air conditions) within:

a) One hour of flight time, at cruising speed with only one engine operative.

b) Two hours of flight time at cruising speed all engines operating.

c) One hour of flight time at cruising speed all engines operating.

d) Two hours of flight time, at cruising speed with only one engine operative.

11. For most large aeroplanes, spoilers are:

a) Lower wing surface devices and their deflection can be symmetrical or asymmetrical.

b) Upper wing surface devices and their deflection is always asymmetrical.

c) Upper wing surface devices and their deflection can be symmetrical or asymmetrical.

d) Lower wing surface devices and their deflection is always asymmetrical.

12. 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.

13. Which phenomena will normally influence the reception of VHF transmission?

a) Electrical discharges as they happen frequently in thunderstorms

b) The ionosphere

c) Day and night effect

d) Level of aircraft and terrain elevations

14. Which of the following data, in addition to the Pseudo Random Noise (PRN) code, forms part of the so called 'Navigation Message' transmitted by NAVSTAR/GPS satellites?

a) Time

b) Data to impair the accuracy of the position fix

c) Almanac data

d) Data to correct receiver clock error; almanac data

15. On a symmetrical aerofoil, the pitching moment for which CL = 0 is:

a) Equal to the moment coefficient for stabilized angle of attack

b) Zero

c) Negative (pitch-down)

d) Positive (pitch-up)

16. Erratic indications may be experienced when flying towards a basic VOR/DME-based Area Navigation System 'Phantom Station':

a) When in the cone of silence overhead the Phantom Station

b) Because, under adverse conditions (relative bearing to the Phantom Station other than 180°/360°) it takes the computer more time to calculate the necessary information

c) When the Phantom Station is out of range

d) When operating at low altitudes close to the limit of reception range from the reference station

17. In an autopilot system, the basic stabilisation modes are: 1) Altitude hold. 2) Pitch attitude hold. 3) Roll attitude hold. 4) IAS hold. The combination regrouping all the correct statements is:

a) 1, 2, 3

b) 2, 3, 4

c) 2, 3

d) 1

18. Your flight manual does not include specific supplementary information on landing distances on wet runways and the service bulletins or weather reports indicate that the runway may be wet at the estimated time of arrival. The required landing distance on a dry runway must be increased by:

a) 18 %

b) 20 %

c) 15 %

d) 17.6 %

19. An aeroplane whose maximum approved passenger seating configuration is 31 to 60 seats must be equipped with at least:

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

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

c) 5 hand fire-extinguishers conveniently located in the passenger compartment.

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

20. The 'climb gradient' is defined as the ratio of:

a) The increase of altitude to horizontal air distance expressed as a percentage

b) Rate of climb to true airspeed

c) True airspeed to rate of climb

d) The increase of altitude to distance over ground expressed as a percentage

21. ATT Mode of the Inertial Reference System (IRS) is a back-up mode providing:

a) only attitude information

b) navigation information

c) only attitude and heading information

d) altitude, heading and position information

22. How many degrees has the mean sun moved along the celestial equator in 8 hours and 8 minutes?

a) 148°

b) 18°

c) 56°

d) 122°

23. The centre of gravity location of the aeroplane is normally computed along the:

a) Longitudinal axis.
b) Horizontal axis.
c) Lateral axis.
d) Vertical axis.

24. 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

25. The first clouds are thin, wispy cirrus, followed by sheets of cirrus and cirrostratus, and altostratus. The sun is obscured as the altostratus thickens and drizzle or rain begins to fall. The cloud base is lowering as Nimbostratus arrives. These phenomena describe the approach of a

a) Warm front
b) Sea-breeze front
c) Trade wind front
d) Cold front

26. Equivalent Air Speed (EAS) is:

a) Calibrated Air Speed (CAS) corrected for compressibility error.
b) True Air Speed (TAS) corrected for compressibility error.
c) Calibrated Air Speed (CAS) corrected for density error.
d) True Air Speed (TAS) corrected for compressibility and density errors.

27. The distance between a NAVSTAR/GPS satellite and receiver is:

a) Determined by the time taken for the signal to arrive from the satellite multiplied by the speed of light
b) Determined by the phase shift of the Pseudo Random Noise code multiplied by the speed of light
c) Calculated, using the WGS-84 reference system, from the known positions of the satellite and the receiver
d) Calculated from the Doppler shift of the known frequencies

28. Given: Standard Empty Mass 1764 lbs. Optional Equipment 35 lbs. Pilot + Passenger 300 lbs. Cargo 350 lbs. Ramp Fuel (Block Fuel) 60 Gal. Trip Fuel 35 Gal. Taxi Fuel 1.7 Gal. Final Reserve Fuel 18 Gal. Fuel density 6 lbs/Gal. Determine the expected landing mass.

a) 2589 lbs

b) 2557 lbs

c) 2472 lbs

d) 2599 lbs

29. 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

30. If an aeroplane is at a higher mass than anticipated, for a given airspeed the angle of attack will

a) Be decreased, drag will decrease and endurance will increase.

b) Remain constant, drag will decrease and endurance will decrease.

c) Be greater, drag will increase and endurance will decrease.

d) Remain constant, drag will increase and endurance will increase.

31. Aircraft flying along the same track may be separated by DME-distances from the same DME and it is confirmed that the aircraft have passed each other. Specify the shortest difference in DME-distance to make it possible for one aircraft to climb or descend

a) 12 NM

b) 15 NM

c) 10 NM

d) 20 NM

32. From which of the following would you expect to find facilitation information regarding customs and health formalities?

a) NAV/RAD charts

b) ATCC

c) AIP

d) NOTAM

33. If a pilot receives an instruction from ATC which cannot be carried out, the reply should use the phrase:

a) UNABLE

b) NEGATIVE INSTRUCTION

c) REGRET CANNOT FOLLOW INSTRUCTION

d) CANCEL INSTRUCTION

34. At which time, if any, are polar front jet streams over the South Pacific usually strongest?

a) July

b) October

c) There is no annual variation

d) January

35. 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

36. When engaged in the lateral navigation mode (LNAV) the autopilot uses:

a) The FMS active (TO) waypoint coordinates.

b) The FMS computation of the aircraft position and the FMS active (TO) waypoint bearing.

c) The FMS roll or heading command.

d) The FMS path angle command.

37. RADAR instructs aircraft X-BC:'X-BC squawk standby '. What does this mean?

a) X-BC is requested to standby on the frequency
b) X-BC is requested to standby for radar vectors
c) X-BC is requested to switch to standby position
d) X-BC is requested to standby as the radar controller is busy

38. If a NAT contingency requires a descent below FL 290 after the 5 NM parallel offset has been established, the aircraft should:

a) Return immediately to the cleared route centreline.
b) Use a 1 000 ft offset from all normally used flight levels.
c) Establish a 500 ft vertical offset from the flight levels normally used and proceed as required by the situation.
d) Use only SLOP and keep the assigned flight level.

39. Hard iron magnetism in aircraft may be caused by:

a) All answers are correct.
b) A strike of lightning.
c) Magnetic qualities of the cargo or baggage.
d) Steel components, mainly in engines and undercarriage.

40. Given: TAS = 235 kt, HDG (T) = 076°W/V = 040/40kt. Calculate the drift angle and GS?

a) 7L - 269 kt
b) 5L - 255 kt
c) 7R - 204 kt
d) 5R - 207 kt

41. A pilot successfully completes a difficult and stressful landing at an aerodrome. The next time a landing is attempted under the same conditions and at the same aerodrome, is the pilot likely to experience:

a) A lower level of stress
b) The pilot should only attempt a landing at the same aerodrome if the conditions are improved
c) The same stress level as the first landing
d) A higher level of stress

42. A frequency of 10 GHz is considered to be the optimum for use in an airborne weather radar system because:

a) The larger water droplets will give good echoes

b) Enables the aircraft to detect clear air turbulence

c) Static interference is minimised

d) Greater detail can be obtained at the more distant ranges of the smaller water droplets

43. Under icing conditions, if you exceeded the holdover time, the correct procedure is:

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

b) De-ice again the aeroplane, then apply anti-icing fluid.

c) De-ice the aeroplane.

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

44. An aircraft is considered to be maintaining its assigned level as long as the SSR mode C derived level information indicated that it is within:

a) +/- 300 ft of the assigned level.

b) +/- 500 ft of the assigned level.

c) +/- 250 ft of the assigned level.

d) +/- 200 ft of the assigned level.

45. An aircraft is flying north-east at 2500 feet. TOWER requests heading and level. What is the correct response:

a) Heading north-east at level 25

b) Heading 045 at 2500 feet

c) 045 and 2500

d) Heading 45 at 2500 feet

46. Which phrase is correct when advising an ATS unit that you are leaving the frequency?

a) Changing to Wrayton Information 125.750.

b) Going over to Wrayton Information 125.750 now.

c) Switching frequency to 125.750.

d) Leaving you for 125.750.

47. The aircraft has started a descent. Select the correct radiotelephony transmission:

a) LEAVING FL 200

b) LEAVING LEVEL 200 FOR LEVEL 120

c) LEAVING FL 200, DESCENDING TO FL 120

d) STARTING DESCENT

48. Which word shall be used to ask a station whether you have correctly received a message, clearance, instruction, etc?

a) Correct

b) Acknowledge

c) Confirm

d) Verify

49. A signal sent by radiotelephony consisting of the spoken word MAYDAY MAYDAY MAYDAY means:

a) The aircraft has a very urgent message to transmit concerning the safety of a ship, aircraft or vehicle

b) The aircraft has a message to transmit concerning adverse weather conditions along its route of flight

c) Imminent danger threatens the aircraft and immediate assistance is required

d) The aircraft is forced to perform a fuel dumping procedure

50. A Foehn wind occurs on the

a) Windward side of a mountain range and is caused by surface heating

b) Leeward side of a mountain range and is caused by significant moisture loss by precipitation from cloud

c) Leeward side of a mountain range and is caused by the condensation level being lower on the leeward side than on the windward side

d) Windward side of a mountain range and is caused by surface cooling and reverse air flow

51. A commercial air transport aeroplane with reciprocating engines, the final reserve should be:

a) Fuel to fly for 2 hours

b) Fuel to fly for 1 hour at holding speed

c) Fuel to fly for 45 minutes

d) Fuel to fly for 30 minutes at holding speed

52. Given: Distance 'A' to 'B' 1973 NM Groundspeed 'out' 430 kt Groundspeed 'back' 385 kt Safe endurance 7 HR 20 MIN. The distance from 'A' to the Point of Safe Return (PSR) 'A' is:

a) 1698 NM
b) 1664 NM
c) 1422 NM
d) 1490 NM

53. The length of a clearway may be included in:

a) The take-off distance available
b) The distance to reach V1
c) The take-off run available
d) The accelerate-stop distance available

54. The Dry Operating Mass is the total mass of the aircraft ready for a specific type of operation but excluding

a) Usable fuel and traffic load.
b) Usable fuel, potable water and lavatory chemicals.
c) Potable water and lavatory chemicals.
d) Usable fuel and crew.

55. A line connecting the leading edge and trailing edge midway between the upper and lower surface of an aerofoil. This definition is applicable for:

a) The camber line
b) The upper camber line
c) The mean aerodynamic chord line
d) The chord line

56. Given: TAS = 125 kt, True HDG = 355°, W/V = 320°(T)/30kt. Calculate the true track and GS?

a) 345 - 100 kt
b) 005 - 102 kt
c) 002 - 98 kt
d) 348 - 102 kt

57. ICAO Annex 11 defines Area Navigation (RNAV) as a method of navigation which permits aircraft operation on any desired flight path:

a) Outside the coverage of station-referenced navigation aids provided that it is equipped with a minimum of one serviceable self-contained navigation aid

b) Within the coverage of station-referenced navigation aids or within the limits of the capability of self-contained aids, or a combination of these

c) Outside the coverage of station-referenced navigation aids provided that it is equipped with a minimum of two serviceable self-contained navigation aids

d) Within the coverage of station-referenced navigation aids provided that it is equipped with a minimum of one serviceable self-contained navigation aid

58. For the flight crew members, quick donning type of oxygen masks are compulsory on board any pressurized aeroplane operating at a pressure altitude above:

a) 29 000 ft

b) 13 000 ft

c) 10 000 ft

d) 25 000 ft

59. The blood in the pulmonary artery is:

a) Lacking in both oxygen and carbon dioxide

b) Rich in oxygen and lacking in carbon dioxide

c) Lacking in oxygen and rich in carbon dioxide

d) Rich in both oxygen and carbon dioxide

60. For a turbine engine, the term self-sustaining speed relates to the speed at which the engine:

a) Will run without any external assistance.

b) Will enable the generators to supply bus-bar voltage.

c) Operates most efficiently in the cruise..

d) Is designed to idle after starting.

61. An aircraft flies the following rhumb line tracks and distances from position 04°00'N 030°00'W:600 NM South, then 600 NM East, then 600 NM North, then 600 NM West. The final position of the aircraft is:

a) 04°00'N 030°00'W

b) 04°00'N 030°02'W

c) 03°58'N 030°02'W

d) 04°00'N 029°58'W

62. In accordance with Part-CAT (Aerodrome Operating Minima), for a Category IIIB approach and landing, the RVR shall not be less than:

a) 75 m

b) 50 m

c) 100 m

d) 150 m

63. Which of the following represents the minimum for V1?

a) VMU

b) VLOF

c) VR

d) VMCG

64. Total pressure is: (rho = density)

a) Static pressure plus dynamic pressure.

b) Measured at a small hole in a surface, parallel to the local stream.

c) 1/2 rho V^2.

d) Static pressure minus dynamic pressure.

65. The lowest cloud conditions (oktas/ft) at BORDEAUX/MERIGNAC at 1330 UTC were

BORDEAUX / MERIGNAC
LFBD / BOD

SA1330	121330Z 21005KT 9000 FEW030TCU FEW033CB SCT040 BKN100 09/08 Q1005 TEMPO 25015G25KT 3000 TSRA SCT005 BKN015CB=
FC1100r	121100Z 121221 28010KT 9999 -RA SCT020 FEW025CB SCT040 TEMPO 1218 25015G25KT 6000 SHRA SCT008 SCT020CB BKN033 PROB30 TEMPO 1218 28020G30KT 3000 TSRA SCT005 BKN015CB BKN030 BECMG 1821 22004KT 8000 NSW FEW006 BKN030=
FT1000	121000Z 121812 30010KT 9999 SCT020 FEW025CB BKN040 BECMG 1822 22004KT 8000 FEW006 BKN030 BECMG 0306 24005KT 6000 SCT007 SCT015 BKN090 BECMG 1012 -RA=

a) 1 to 4 at 3000

b) 3 to 4 at 2000

c) 1 to 2 at 3000

d) 3 to 4 at 800

66. To indicate a temperature, a thermocouple requires:

a) Direct current

b) Battery power

c) Alternating current

d) No power supply

67. A "slat" is:

a) A leading edge high lift device, hinged at its forward edge, which increases the camber and leading edge radius of the main aerofoil when deployed.

b) A trailing edge device which is automatically deployed by movement of the stagnation point at high angles of attack.

c) An auxiliary, cambered aerofoil positioned forward of the main aerofoil so as to form a slot.

d) A fixed slot in the leading edge of some older types of aircraft.

68. What is the effect of tailwind on the time to climb to a given altitude?

a) The time to climb increases

b) The time to climb decreases

c) The time to climb does not change

d) The effect on the time to climb will depend on the helicopter type

69. Given: Maximum structural take-off mass: 7400 kg Maximum structural landing mass: 7400 kg Zero Fuel Mass: 5990 kg. Taxi Fuel: 15 kg. Contingency Fuel: 110 kg. Alternate Fuel: 275 kg. Final Reserve Fuel: 250 kg. Trip Fuel: 760 kg. The expected Landing Mass at destination will be:

a) 7385 kg

b) 7400 kg

c) 6625 kg

d) 7135 kg

70. After passing at right angles through a very active cold front in the direction of the cold air, what will you encounter at FL 50, in the northern hemisphere immediately after a marked change in temperature?

a) A backing in the wind direction.

b) A veering in the wind direction.

c) A decrease in tailwind.

d) An increase in tailwind.

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Response Scheme

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

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