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ATPL - Airline Transport Pilot license - Aircraft General Knowledge - Airframe, Systems, Powerplant



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STUDENT NAME:

DATE AND TIME:

01. In some aircraft, there is a protection device to avoid the landing gear being inadvertently retracted on the ground. It consists of:

- a) An aural warning horn.
- b) A latch located in the landing gear lever.
- c) A bolt.
- d) A warning light which is activated by the weight on wheels sensor system.

02. Large hail stones

- a) Only occur in thunderstorms of mid-latitudes
- b) Are typically associated with severe thunderstorms
- c) Only occur in frontal thunderstorms
- d) Are entirely composed of clear ice

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

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

04. Your aircraft and an intruding traffic are both TCAS II equipped. Your TCAS can generate:

- a) Coordinated traffic advisories.
- b) Coordinated and complementary resolution advisories.
- c) Traffic advisories coordinated with the ATC instructions.
- d) Resolution advisories coordinated with the ATC instructions.

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05. In order to ascertain whether a cloud return on an Aircraft Weather Radar (AWR) is at or above the height of the aircraft, the tilt control should be set to:(Assume a beam width of 5°)

- a) 2.5° down
- b) 0°
- c) 5° up
- d) 2.5° up

06. 3D RNAV fixing gives you:

- a) Horizontal and vertical profile guidance
- b) 2D RNAV plus speed control
- c) 2D RNAV plus time guidance
- d) Horizontal, vertical profile and time guidance

07. An aircraft is squawking 7600. This indicates:

- a) It is diverting to the alternate aerodrome
- b) It is requesting immediate level change
- c) It is unable to establish communication due to radio equipment failure
- d) It is about to make a forced landing

08. Given: ETA to cross a meridian is 2100 UTC GS is 441 kt. TAS is 491 kt. At 2010 UTC, ATC requests a speed reduction to cross the meridian at 2105 UTC. The reduction to TAS will be approximately:

- a) 90 kt
- b) 40 kt
- c) 60 kt
- d) 75 kt

09. Which of the following is most likely to lead to the dissipation of radiation fog?

- a) A marked decrease in wind velocity close to the ground
- b) A marked increase in wind velocity near the ground
- c) A build up of a high pressure area resulting in adiabatic warming associated with a sinking air mass
- d) Ground cooling caused by radiation during the night

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

- a) Crash axe or a crow-bar in the flight deck.
- b) Crow-bar in the flight deck and a crash axe in the passenger compartment.
- c) Crash axe in the flight deck and a crow-bar in the passenger compartment.
- d) Crash axe and a crow-bar in the passenger compartment.

11. Traffic Load is the:

- a) Dry Operating Mass minus the disposable load.
- b) Zero Fuel Mass minus Dry Operating Mass.
- c) Take-off Mass minus Zero Fuel Mass.
- d) Dry Operating Mass minus the Variable Load.

12. A wind of 20 knots corresponds to an approximate speed of

- a) 10 km/h
- b) 40 m/sec
- c) 50 km/h
- d) 10 m/sec

13. Induced drag at constant IAS is affected by:

- a) Aeroplane wing location
- b) Aeroplane weight
- c) Engine thrust
- d) Angle between wing chord and fuselage centre line

14. The climb or descent through NAT HLA (North Atlantic High Level Airspace) of a non approved for NAT HLA aircraft:

- a) Is forbidden in all circumstances
- b) Can be authorised under radar control if the pilot is in VHF contact with the controller
- c) Can be authorised only if the pilot is in communication with the conflicting aircraft pilot
- d) Can be authorised when the aircraft has two long range navigation systems

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15. During the formation of rime ice in flight, water droplets freeze

- a) Slowly and spread out
- b) Slowly and do not spread out
- c) Rapidly and spread out
- d) Rapidly and do not spread out

16. The region of the globe where the greatest number of tropical revolving storms occur is

- a) The north-west Pacific, affecting Japan, Taiwan, Korea and the Chinese coastline.
- b) The northern Indian ocean, affecting India, Sri Lanka and Bangladesh.
- c) The south-western Indian ocean, affecting Madagascar, Mauritius and the island of Réunion.
- d) The Caribbean sea, affecting the West Indies, Mexico and the south-east coastline of the US

17. How many feet are equivalent to 9,5 km?

- a) 57.760 ft
- b) 50.160 ft
- c) 9.500 ft
- d) 31.160 ft

18. The velocity of sound at the sea level in a standard atmosphere is:

- a) 1059 KT
- b) 661 KT
- c) 332 KT
- d) 644 KT

19. An ADF provides the aircraft with bearing information with respect to a ground station. To do this, the ground station emits a signal pattern which is:

- a) Frequency modulated at 30 Hertz
- b) A beam rotating at 30 Hertz
- c) Omnidirectional
- d) Unidirectional

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20. While approaching a mountainous airfield, the captain of a transport aircraft notices a fast and high increase in the indicated airspeed without any change in the pre-selected engine and attitude parameters. The preceding crews had reported the occurrence of windshears in final phase. you must:

- a) Take a level flight attitude to reduce speed, then come back to glide path from above.
- b) Reduce rapidly the selected thrust, maintain on the glide path.
- c) Reduce rapidly the selected thrust in order to reach 1.2 Vs and try a precision landing.
- d) Maintain the aircraft on the glide path, accept a positive speed deviation, monitor the speed evolution.

21. 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.

22. ATC clears Fastair 345 to descend from FL 100 to FL 80. What is the correct read back by the pilot:

- a) Leaving flight level 100 descending to flight level 80, Fastair 345
- b) Leaving 100 to 80, Fastair 345
- c) Down to flight level 80, Fastair 345
- d) Descending to 80, Fastair 345

23. At 47° North the chart distance between meridians 10° apart is 5 inches. The scale of the chart at 47° North approximates:

- a) 1: 8 000 000
- b) 1: 3 000 000
- c) 1: 6 000 000
- d) 1: 2 500 000

24. Which of the following zones is most likely to encounter little or no precipitation?

- a) The north side of the Alps with a prevailing Foehn from the south.
- b) Occlusions.
- c) Frontal zones.
- d) The north side of the Alps with a prevailing Foehn from the north.

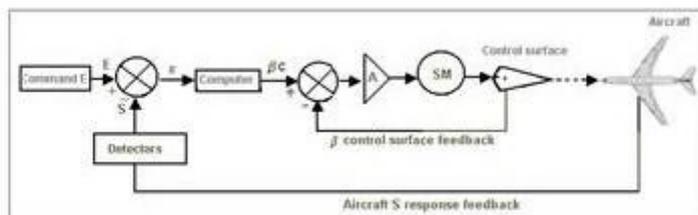
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25. The block diagram of an auto-pilot is shown in the annex. For each control channel (pitch, roll and yaw) the piloting law is the relationship between the deflection of the control surface commanded by the computer (BETA c) and the:



- a) Pilot command E.
- b) Aircraft response S.
- c) Offset EPSILON at the computer input.
- d) Real deflection of the control surface (BETA control surface feedback).

26. Under a Deconfliction Service, the pilot:

- a) Is not responsible for collision avoidance.
- b) Receives deconfliction advice, but remains responsible for collision avoidance.
- c) Must accept all headings issued by the controller.
- d) Receives only general traffic information.

27. 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 up 2. Gear down 3. Wing flaps retracted 4. Wing flaps in take-off position 5. N engines at the take-off thrust 6. (N- 1) engines at the take-off thrust 7. Speed over the path equal to $V_2 + 10$ kt 8. Speed over the path equal to $1.3 V_S$ 9. Speed over the path equal to V_2 10. 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

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28. The airspeed indicator of a twin-engine aircraft comprises different sectors and colour marks. The blue line corresponds to the:

- a) Speed not to be exceeded, or VNE
- b) Optimum climbing speed with one engine inoperative, or V_y
- c) Maximum speed in operations, or VMO
- d) Minimum control speed, or VMC

29. According to the 'Aerodrome Reference Code', the 'Code Letter E' shall identify an aircraft wing span of:

- a) 52 m up to but not including 65 m.
- b) 15 m up to but not including 24 m.
- c) 24 m up to but not including 36 m.
- d) 36 m up to but not including 52 m.

30. You are making a long straight in approach to land, at what range would you make the call "LONG FINAL"?

- a) 3 NM
- b) 2 NM
- c) 4 NM
- d) Between 8 and 4 NM

31. In relation to the NAVSTAR/GPS satellite navigation system, 'Search the Sky' is a:

- a) Procedure performed by the receiver to recognise new satellites becoming operational
- b) Continuous process by the ground segment to monitor the GPS satellites
- c) Continuous procedure performed by the receiver that searches the sky for satellites rising above the horizon
- d) Procedure that starts after switching on a receiver if there is no stored satellite data available

32. On detection of a persistent overvoltage fault on an AC generator connected to the aircraft AC busbars (paralleled bus system), the on-board protection device opens:

- a) The exciter breaker, the generator breaker and tie breaker.
- b) The exciter breaker and the generator breaker.
- c) The generator breaker.
- d) The generator breaker and tie breaker.

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33. The standard mass for a child is

- a) 35 kg for holiday charters and 38 kg for all other flights.
- b) 35 kg for all flights.
- c) 30 kg for holiday charters and 35 kg for all other flights.
- d) 38 kg for all flights.

34. Regarding the obstacle limited take-off mass, which of the following statements is correct?

- a) Wind speed plays no role when calculating this particular mass
- b) A take-off in the direction of an obstacle is also permitted in tailwind condition
- c) The maximum bank angle which can be used is 10°
- d) The obstacle limited mass can never be lower than the climb limited take-off mass

35. Dizziness and tumbling sensations, when making head movements in a tight turn, are symptoms of

- a) 'Pilot's vertigo'
- b) 'Oculogravic illusion'
- c) 'Flicker-vertigo'
- d) 'Nystagmus'

36. The most dangerous icing conditions are encountered in

- a) Icy clouds at high levels.
- b) Unstable clouds at medium levels.
- c) Supercooled precipitation.
- d) Zones where the air temperature is below -15°C.

37. A jet aeroplane cruises buffet free at high constant altitude. Which type of stall can occur if this aeroplane decelerates during an inadvertent increase in load factor?

- a) Low speed stall
- b) Accelerated stall
- c) Deep stall
- d) Shock stall

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38. What does the word 'acknowledge' mean?

- a) Pass me the following information
- b) Repeat all of this message back to me exactly as received
- c) Let me know that you have received and understood this message
- d) Repeat all of your last transmission

39. What does the abbreviation 'H24' mean?

- a) Sunrise to sunset
- b) Continuous day and night service
- c) No specific working hours
- d) Sunset to sunrise

40. What, if any, is the abbreviated call sign of Fastair 2345?

- a) Fastair 345
- b) No abbreviated form
- c) 2345
- d) Fastair 45

41. The Auxiliary Power Unit (APU) has its own AC generator that:

- a) Is driven at constant speed through a constant speed drive (CSD), in the same way as the main AC generator.
- b) Is excited by its Generator Control Unit (GCU) as soon as the APU starts up.
- c) Supplies the aircraft with three-phase 115-200 V, 400 Hz AC
- d) Must have the same characteristics as the main AC generator so that it can be easily coupled with the latter.

42. In accordance with EASA-OPS, 100 % of the passengers in a non-pressurised aircraft shall be supplied with supplemental oxygen for the entire flight time at pressure altitudes above:

- a) 13000 ft.
- b) 15000 ft.
- c) 14000 ft.
- d) 10000 ft.

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43. A class B fire is a fire of:

- a) Solid material usually of organic nature
- b) Electrical source fire
- c) Liquid or liquefiable solid
- d) Special fire: metal, gas, chemical product

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

- a) Red.
- b) Amber.
- c) Magenta.
- d) Red and white striped.

45. DME channels utilise frequencies of approximately:

- a) 1000 MHz
- b) 600 MHz
- c) 300 MHz
- d) 110 MHz

46. What can be the consequence during a descent with a fully open throttle if the waste gate is seized?

- a) The power of the motor will decrease.
- b) The turbine shaft will break.
- c) The manifold air pressure (MAP) value may exceed the maximum allowed value.
- d) The turbine blades will separate.

47. Which of the following three speeds of a jet aeroplane are basically identical? The speeds for:

- a) Maximum drag, maximum endurance and maximum climb angle
- b) Maximum range, minimum drag and minimum glide angle
- c) Holding, maximum climb angle and minimum glide angle
- d) Maximum climb angle, minimum glide angle and maximum range

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48. Given: True HDG = 054°, TAS = 450 kt, Track (T) = 059°, GS = 416 kt. Calculate the W/V?

- a) 010/50kt
- b) 010/45kt
- c) 010/55kt
- d) 005/50kt

49. A synchroscope is used on aircraft to:

- a) Reduce the vibration of each engine.
- b) Set several engines to the same speed.
- c) Achieve optimum control of on-board voltages.
- d) Reduce the RPM of each engine.

50. When preparing to carry out the weighing procedure on an aircraft, which of the following is not required?

- a) Drain all chemical toilet fluid tanks.
- b) Drain all usable fuel.
- c) Removable passenger services equipment to be off-loaded.
- d) Drain all engine tank oil.

51. 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

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52. Refer to Performance Manual MRJT1 Figure 4.4 Given: twin jet aeroplane, Estimated mass on arrival at the alternate 50000 kg, Estimated mass on arrival at the destination 52525 kg, Alternate elevation MSL, Destination elevation 1500 ft Find: Final reserve fuel and corresponding time

Press Alt. ft	Weight x 1,000 kg														
	66	64	62	60	58	56	54	52	50	48	46	44	42	40	38
FUEL FLOW in kg per hour															
37,000					2,740	2,540	2,400	2,260	2,160	2,080	1,980	1,900	1,800	1,740	1,680
35,000		3,020	2,820	2,660	2,520	2,420	2,320	2,220	2,140	2,060	1,960	1,880	1,800	1,720	1,660
30,000	2,840	2,740	2,660	2,560	2,480	2,400	2,300	2,220	2,140	2,060	1,960	1,880	1,800	1,740	1,680
25,000	2,840	2,760	2,660	2,580	2,500	2,420	2,320	2,240	2,160	2,080	2,000	1,920	1,840	1,780	1,720
20,000	2,840	2,760	2,680	2,580	2,500	2,420	2,340	2,260	2,180	2,100	2,020	1,940	1,860	1,800	1,760
15,000	2,880	2,800	2,700	2,620	2,540	2,460	2,380	2,300	2,220	2,140	2,060	1,980	1,920	1,860	1,800
10,000	2,920	2,820	2,740	2,660	2,580	2,500	2,420	2,340	2,260	2,180	2,100	2,020	1,980	1,920	1,880
5,000	2,960	2,860	2,780	2,700	2,620	2,540	2,460	2,380	2,300	2,220	2,140	2,080	2,020	1,960	1,920
1,500	3,000	2,900	2,820	2,740	2,660	2,580	2,520	2,440	2,360	2,280	2,220	2,140	2,080	2,020	1,980

Figure 4.4 Holding Fuel Flow – Flaps Retracted

- a) 2360 kg, 30 min
- b) 1180 kg, 30 min
- c) 1180 kg, 45 min
- d) 2360 kg, 01 h 00 min

53. The system notifying in advance the circumstances requiring important changes in the methods of operation, based on common effective dates, is identified by the acronym:

- a) NOTAM
- b) PANS
- c) AIRAC
- d) IFPS

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54. An aircraft encountering radio communication failure on an IFR flight in VMC is assumed to:

- a) Leave controlled airspace and continue the flight within uncontrolled airspace
- b) Continue to fly in VMC, land at the nearest suitable aerodrome, report its arrival
- c) Continue the flight to destination aerodrome in any case
- d) Squawk IDENT and proceed to the alternate aerodrome

55. Which of the following is the ICAO allocated frequency band for ADF receivers?

- a) 300 - 3000 kHz
- b) 255 - 455 kHz
- c) 200 - 2000 kHz
- d) 190 - 1750 kHz

56. What will be the influence on the aeroplane performance if aerodrome pressure altitude is increased?

- a) It will increase the take-off distance available
- b) It will decrease the take-off distance
- c) It will decrease the take-off run
- d) It will increase the take-off distance

57. In relation to the satellite navigation system NAVSTAR/GPS, the term 'inclination' denotes the angle between the:

- a) Horizontal plane at the location of the receiver and the direct line to a satellite
- b) Orbital plane and the equatorial plane
- c) Horizontal plane at the location of the receiver and the orbital plane of a satellite
- d) Orbital plane and the Earth's axis

58. The FADEC of a gas turbine engine consists of:

- a) An electronic engine control unit only.
- b) An electronic engine control unit and its peripherals (fuel metering, actuators, electrical wiring, sensors...).
- c) An electronic engine control unit and the engine display units in the cockpit.
- d) All electronic engine control units installed on the aircraft.

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59. 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

60. Visual Flight Rules. An aircraft operating in accordance with VFR, above the sea at altitudes between 4500 ft and 9000 ft AMSL, outside controlled airspace shall maintain at least

- a) A distance from cloud of 1000 m horizontally and 1000 ft vertically and a flight visibility of 5 km.
- b) A distance from cloud of 1500 m horizontally and 1000 ft vertically and a flight visibility of 8 km.
- c) A distance from cloud of 1500 m horizontally and 1000 ft vertically and a flight visibility of 5 km.
- d) A distance from cloud of 600 m horizontally and 1000 ft vertically and a flight visibility of 5 km.

61. An engine low oil pressure light has just illuminated. The pilot feels some stress building up. He should:

- a) Persuade himself that this is a false alarm to reduce his stress
- b) Divert immediately to the nearest airfield
- c) Use humour to show that he is not concerned
- d) Control his stress by following appropriate procedures (for example, checklists)

62. 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°.

63. The phases of learning a Motor Programme are:

- a) Cognitive, Associative and Automatic phases
- b) Induction, Simulation and Practice phases
- c) 1st, 2nd and 3rd phases
- d) Initial, Interim and Final phases

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64. Approach Procedures - Missed Approach - Phases. A complete missed approach procedure consists of the following phases?

- a) Arrival, intermediate and final.
- b) Arrival, initial, intermediate and final.
- c) Initial and final.
- d) Initial, intermediate and final.

65. During a deceleration phase at constant attitude, the control system of the artificial horizon results in the horizon bar indicating a

- a) Nose down attitude.
- b) Nose up followed by a nose down attitude.
- c) Constant attitude.
- d) Nose up attitude.

66. The pressoreceptors are located in

- a) The intestines
- b) The carotid and aortic arterial vessels
- c) The lungs
- d) The heart

67. Coriolis illusion, causing spatial disorientation is the result of:

- a) Undergoing positive G
- b) Simultaneous head movements during aircraft manoeuvres
- c) Normal deterioration of the semicircular canals with age
- d) Gazing in the direction of a flashing light

68. Glaucoma is due to:

- a) Damage to the eyeball due to high altitude
- b) Drop in pressure of the liquid around the eye
- c) Excess light on the eyeball
- d) Increase in pressure of the liquid within the eye

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69. The purpose of the proximity of the emergency evacuation path marking system is to:

- a) Mark only the thresholds exits.
- b) Replace the overhead emergency lighting in case of failure.
- c) Guide the emergency evacuation during night only.
- d) Give additional guidance during an emergency evacuation with a thick smoke.

70. Air traffic services may require an aircraft to report position when flying east-west, north of 70°N between 10°W and 50°W, every:

- a) 15° of longitude.
- b) 10° of longitude.
- c) 5° of longitude.
- d) 20° of longitude.

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Response Scheme

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

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