# Exam simulation

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

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| STUDENT NAME: | DATE AND TIME: |
|---|---|

**01. The aircraft commander, when he has reasonable grounds to believe that a person has committed or is about to commit, on board the aircraft, an offence against penal law**

a) May deliver such person to the competent authorities
b) May not require or authorise the assistance of other crew members
c) May require the assistance of passengers to restrain such person
d) May request such person to disembark

**02. A category II precision approach (CAT II) is an approach with:**

a) A decision height of at least 200 ft
b) A decision height of at least 100 ft
c) No decision height
d) A decision height of at least 50 ft

**03. What seems to be the main role of Orthodox sleep?**

a) It essentially allows for physical recovery
b) Its main role is associated with activities of memory activities and restoration of attention capabilities
c) It includes physical and mental recuperation associate with fatigue
d) Via physical recovery, it is characterised by an alternation of dream phases and paradoxical phases

**04. Which one is the most correct statement regarding the range of the DME system?**

a) Operates on the principle of phase comparison
b) Operates on VHF
c) Has unlimited range due to ground wave propagation
d) The range is limited to the line of sight.

**05. What is the Q-code for 'magnetic bearing from the station'?**

a) QTE
b) QDM
c) QDR
d) QFE

**06. Interception, DAY or NIGHTWhich manoeuvre will be executed by an intercepting aircraft if the pilot of this aircraft wants to communicate to the intercepted aircraft 'YOU MAY PROCEED'?**

a) Rocking aircraft twice in front of the intercepting aircraft, after acknowledgement by intercepted aircraft a slow level turn (normally to the left).

b) An abrupt break-away manoeuvre from the intercepted aircraft consisting of a climbing turn of 90 degrees or more without crossing the line of flight of the intercepted aircraft.

c) Rocking aircraft and flashing navigational lights at regular intervals.

d) Circling the intercepted aircraft in a counter-clockwise pattern for aeroplanes, in a clockwise pattern for helicopter.

**07. The flight preparation of a turbojet aeroplane provides the following data: Take-off runway limitation: 185 000 kgLanding runway limitation: 180 000 kgPlanned fuel consumption: 11 500 kgFuel already loaded on board the aircraft: 20 000 kg Knowing that:Maximum take-off mass (MTOM): 212 000 kg Maximum landing mass (MLM): 174 000 kg Maximum zero fuel mass (MZFM): 164 000 kg Dry operating mass (DOM): 110 000 kgThe maximum cargo load that the captain may decide to load on board is:**

a) 54 000 kg

b) 61 500 kg

c) 55 500 kg

d) 55 000 kg

**08. Which statement with respect to the step climb is correct?**

a) Executing a desired step climb at high altitude can be limited by buffet onset at g-loads greater than 1

b) A step climb is executed in principle when, just after levelling off, the 1.3g altitude is reached

c) A step climb is executed because ATC desires a higher altitude

d) A step climb must be executed immediately after the aeroplane has exceeded the optimum altitude

**09. Complete line 3 of the 'FLIGHT NAVIGATION LOG', positions 'E' to 'F'. What is the HDG°(M) and ETA?**

| Line No. | Time | Course/ Track (T) | W/V | HDG (T) | VAR | HDG (M) | POSITION FROM | TO | CAS/ MACH | FL OAT | TAS | GS | DIST | TIME | ETA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1015 | 270 | 050/40 | | 7E | | A | B | 210 | 180 -20 | | | 300 | | |
| 2 | 1050 | 180 | 320/50 | | 5W | | C | D | 175 | 160 -10 | | | 480 | | |
| 3 | 1125 | 090 | 140/60 | | 10W | | E | F | M 0.82 | 350 -40 | | | 300 | | |
| 4 | 1210 | 360 | 315/70 | | 10E | | G | H | M 0.78 | 310 -35 | | | 600 | | |
| 5 | 1245 | 330 | 240/30 | | 17W | | J | K | 150 | 100 -10 | | | 275 | | |
| 6 | 1355 | 070 | 020/60 | | 11W | | L | M | M 0.84 | 390 -55 | | | 495 | | |

a) HDG 095° - ETA 1155 UTC
b) HDG 105° - ETA 1205 UTC
c) HDG 115° - ETA 1145 UTC
d) HDG 106° - ETA 1215 UTC

**10. What does the word 'cancel' mean?**

a) A change has been made to your last clearance
b) Wait and I will call you
c) Annul the previously transmitted clearance
d) Consider that transmission as not sent

**11. When a pilot is facing a problem during flight he should**

a) Always make up his mind quickly to give himself as much spare time as possible
b) Avoid making up his mind until the very last minute
c) Take as much time as he needs and is available to make up his mind
d) Make up his mind before consulting other crew members

**12. An aircraft in state of emergency shall squawk:**

a) 6700
b) 7700
c) 7500
d) 7600

**13. What is the meaning of the expression 'FEW'?**

a) 3 - 4 oktas.
b) 1 - 2 oktas.
c) 8 oktas.
d) 5 - 7 oktas.

**14. Fuel pumps submerged in the fuel tanks of a multi-engine aircraft are:**

a) Low Pressure Variable Swash Plate Pumps.
b) Centrifugal high pressure pumps.
c) Centrifugal low pressure type pumps.
d) High Pressure Variable Swash Plate Pumps.

**15. When should an aircraft in the heavy-wake-turbulence category include the word 'Heavy' immediately after its call sign e.g. Fastair 345 heavy?**

a) Never

b) In the initial call to the aerodrome control tower and the approach control unit

c) In all calls to the aerodrome tower and the approach control unit

d) In all calls

**16. The 'Effective Performance Time' or 'Time of Useful Consciousness' after a decompression at 35 000 ft is:**

a) Approximately 3 minutes

b) Between 30 and 60 seconds

c) Less than 20 seconds

d) Approximately 5 minutes

**17. For a planned flight the calculated fuel is as follows: Flight time: 2h42minThe reserve fuel, at any time, should not be less than 30% of the remaining trip fuel. Taxi fuel: 9 kgBlock fuel: 136 kgHow much fuel should remain after 2 hours flight time?**

a) 33 kg trip fuel and 10 kg reserve fuel.

b) 25 kg trip fuel and 8 kg reserve fuel.

c) 33 kg trip fuel and no reserve fuel.

d) 23 kg trip fuel and 10 kg reserve fuel.

**18. Approach Procedures - Non-precision - straight-inA so-called 'straight-in-approach' is considered to be acceptable for a non-precision approach, if the angle between the final approach track and the runway centreline is:**

a) 40° or less

b) 30° or less

c) 10° or less

d) 20° or less

**19. Standard time is:**

a) The time enforced by the legal authority to be used in a country or an area.

b) The time used at a particular meridian.

c) The time most frequently used for air navigation.

d) The time which is accepted and used as a standard for the whole world.

**20. The Minimum Equipment List (MEL) is established by:**

a) The airline operator and approved by the authority.

b) The Civil Aviation Authority of the European states.

c) The aeronautical authority the airline operator depends on.

d) The manufacturer and approved by the authority.

**21. Airborne weather radars are generally based on the use of:**

a) Secondary radar in the SHF band

b) Primary radar in the UHF band

c) Secondary radar in the VHF band

d) C/A- and P

**22. What is the transponder code for radio communication failure:**

a) 7500

b) 6700

c) 7700

d) 7600

**23. 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

**24. 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

**25. Errors which occur during highly automated actions may result from:1. the capture of a poor action subprogram2. a mistake in the decision making process3. the application of a poor rule4. an action mode error**

a) 3,4

b) 1,2

c) 2,3,4

d) 1,4

**26. Longitudinal separation minima based on time for aircraft at the same cruising level when navigation aids permit frequent determination of position and speed provided that the preceding aircraft is maintaining a true air speed of 40 Kt or more faster than the succeeding aircraft will be**

a) 5 minutes

b) 3 minutes

c) 2 minutes

d) 10 minutes

**27. How many satellites form the nominal NAVSTAR GPS constellation?**

a) 12

b) 6

c) 24

d) 6

**28. The reason why the measured distance between a NAVSTAR/GPS satellite navigation system satellite and a receiver is called a 'Pseudo-Range' is because the:**

a) Measured distance is based on the Pseudo Random Noise code

b) Movement of satellite and receiver during the distance calculation is not taken into account

c) Calculated range includes receiver clock error

d) 7500

**29. The aircraft DME receiver cannot lock on to interrogation signals reflected from the ground because:**

a) DME transmits twin pulses

b) Reflections are subject to doppler frequency shift

c) DME pulse recurrence rates are varied

d) 1000 MHz

**30. Which of the following combinations adversely affects take-off and initial climb performance?**

a) High temperature and high relative humidity

b) Low temperature and low relative humidity

c) High temperature and low relative humidity

d) Low temperature and high relative humidity

**31. If you are requested to 'Report flight conditions', what does that mean:**

a) Indicate whether you are flying in IMC or in VMC

b) Indicate whether you are flying IFR or VFR

c) Indicate if visibility is sufficient for landing

d) Indicate weather conditions as wind, visibility, temperature

**32. Ahead of a warm front (northern hemisphere) the wind direction changes from the surface up to the tropopause. The effect of this change is that the wind**

a) Veers in the friction layer and backs above the friction layer

b) Backs in the friction layer and veers above the friction layer

c) Backs in the friction layer and backs above the friction layer

d) Veers in the friction layer and veers above the friction layer

**33. When the term 'Scattered' is used in an aviation routine weather report (METAR), the amount of clouds covering the sky is:**

a) More than half but less than overcast (5 to 7 oktas)

b) Half or less than half (3 or 4 oktas)

c) No clouds below 5000 feet/GND

d) Sky entirely covered (8 oktas)

**34. A repetitive flight plan (RPL) is filed for a scheduled flight: Paris-Orly to Angouleme, Paris Orly as alternate. Following heavy snow falls, Angouleme airport will be closed at the expected time of arrival. The airline decides before departure to plan a re-routing of thatflight to Limoges.**

a) The RPL must be cancelled for that day and a specific flight plan has to be filed.

b) The pilot-in-command must advise ATC of his intention to divert to Limoges at least 15 minutes before the planned time of arrival.

c) It is not possible to plan another destination and the flight has to be simply cancelled that day (scheduled flight and not chartered).

d) The airline's 'Operations ' Department has to transmit a change in the RPL at the ATC office, at least half an hour before the planned time of departure.

**35. Which of the following are included in Maslow's Hierarchy of Needs?1. Freedom from pain and danger2. Expressions of capacities and talents3. Self-esteem needs4. Self-fulfilment needs5. Physiological needs**

a) 3, 4 and 5 only

b) 1, 2 and 4 only

c) All except 2

d) All the above

**36. During climb to the cruising level, a headwind component:**

a) Increases the climb time

b) Increases the amount of fuel for the climb

c) Decreases the climb time

d) Decreases the ground distance flown during that climb

**37. What is the Q-code for 'magnetic heading to the station (no wind)?**

a) QNE

b) QDR

c) QTE

d) QDM

**38. 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.

**39. In a fire detection system with single-loop continuous components (with no fault protection), if the line is accidentally grounded:**

a) The Power Supply Is Cut Off Automatically.

b) There will be no effect on the system

c) The fire alarm is triggered

d) The Engine Fire Extinguisher Striker Is Automatically Activated.

**40. Autokinetic illusion is:**

a) The sensation during a radial acceleration of seeing a fixed reference point moving into the opposite direction of the acceleration

b) An illusion in which a stationary point of light, if stared at for several seconds in the dark, may - without a frame of reference - appear to move

c) Poor interpretation of the surrounding world

d) A conflict between the visual system and bodily sensations

**41. In which of the following areas is the highest frequency of thunderstorms encountered ?**

a) Polar

b) Subtropical

c) Tropical

d) Temperate

**42. Given:Maximum structural take-off mass= 146 900 kg Maximum structural landing mass= 93 800 kg Maximum zero fuel mass= 86 400 kgTrip fuel= 27 500 kgBlock fuel= 35 500 kgEngine starting and taxi fuel = 1 000 kg The maximum take-off mass is equal to:**

a) 113 900 kg

b) 121 300 kg

c) 120 300 kg

d) 120 900 kg

**43. What aircraft equipment marked a substantial decrease in hull loss rates in the eighties?**

a) DME
b) SSR
c) GPWS
d) TCAS

**44. A braking action of 0.25 and below reported on a SNOWTAM is:**

a) Unreliable
b) Medium
c) Poor
d) Good

**45. With the development of a thunderstorm, at what stage will there be only updraughts of air?**

a) Mature stage
b) Anvil stage
c) Initial stage
d) Dissipating stage

**46. Given:Distance 'A' to 'B' 3623 NM Groundspeed 'out' 370 kt Groundspeed 'back' 300 ktThe time from 'A' to the Point of Equal Time (PET) between 'A' and 'B' is:**

a) 263 MIN
b) 238 MIN
c) 323 MIN
d) 288 MIN

**47. When in flight, a piston engine is stopped and the propeller blade pitch angle is near 90°, the propeller is said to be...**

a) Windmilling.
b) Feathered.
c) At zero drag.
d) Transparent.

**48. 'Integrated range' curves or tables are presented in the Aeroplane Operations Manuals. Their purpose is**

a) To determine the flight time for a certain leg under consideration of temperature deviations.

b) To determine the fuel consumption for a certain still air distance considering the decreasing fuel flow with decreasing mass.

c) To determine the optimum speed considering the fuel cost as well as the time related cost of the aeroplane.

d) To determine the still air distance for a wind components varying with altitude.

**49. An aeroplane is in steady cruise at flight level 270. The auto-throttle maintains a constant calibrated airspeed. If the static air temperature decreases, the Mach number:**

a) Remains constant.

b) Increases if the outside temperature is higher than the standard temperature, decreases if lower.

c) Decreases.

d) Increases.

**50. An aircraft at FL 100 should be able to receive a VOR groundstation at 100' above MSL at an approximate maximum range of:**

a) 123 NM

b) 137 NM

c) 145 NM

d) 130 NM

**51. Which statement is correct for a descent without engine thrust at maximum lift to drag ratio speed?**

a) The higher the gross mass the lower is the speed for descent.

b) The higher the average temperature (OAT) the lower is the speed for descent.

c) The higher the gross mass the greater is the speed for descent.

d) The mass of an aeroplane does not have any effect on the speed for descent.

**52. Considering only structural limitations, on very short legs with minimum take-off fuel, the Traffic Load is normally limited by:**

a) Maximum Zero Fuel Mass.

b) Actual Landing Mass.

c) Maximum Take-off Mass.

d) Maximum Landing Mass.

**53. InterceptionAn aircraft equipped with SSR transponder which is intercepted by another aircraft shall immediately, unless otherwise instructed by the appropriate air traffic service unit, select Mode A**

a) Code 7600

b) Code 7500

c) Code 7000

d) Code 7700

**54. For the same TAS, when pressure altitude decreases below the tropopause:**

a) Mach number remains constant.

b) The difference between surrounding conditions and ISA must be known to deduce the Mach number variation.

c) Mach number increases.

d) Mach number decreases.

**55. A water fire-extinguisher (straight jet) can be used on a fire of:1 - solids (fabric, carpet, ...)2 - liquids (ether, gasoline, ...) 3 - gas4 - metals (sodium, ...)The combination regrouping all the correct statements is:**

a) 2

b) 1

c) 3 and 4

d) 3

**56. VFR flights shall not be flown over the congested areas of cities at a height less than**

a) 500 ft above the highest obstacle.

b) 2000 ft above the highest obstacle within a radius of 600 ft from the aircraft.

c) The highest obstacle.

d) 1000 ft above the highest obstacle within a radius of 600 m from the aircraft.

**57. Which of the following actions shall be taken in case of a controlled flight deviates from the track?**

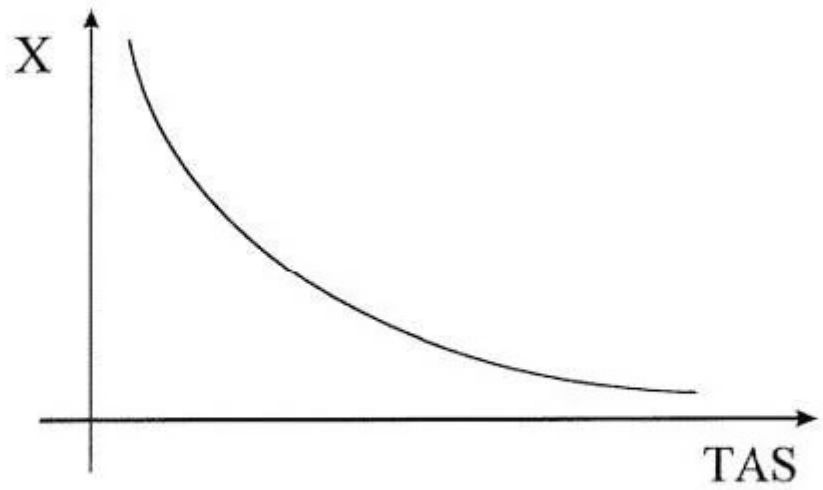
a) Inform the ATC unit immediately

b) If VMC, maintain this condition, waiting for the ATC instructions

c) Adjust the heading of aircraft to regain track as soon as practicable

d) Notify ATC of the new track immediately and comply with instructions

**58. The diagram shows the parameter X versus TAS. If a horizontal flight is considered the axis X shows**




a) The induced drag
b) The parasite drag
c) The lift force
d) The total drag

**59. The Mach number:**

a) Is the ratio between the TAS of the aeroplane and the speed of sound at sea level.
b) Is the ratio between the IAS of the aeroplane and the local speed of sound.
c) Is the ratio between the TAS of the aeroplane and the local speed of sound.
d) Increases at a given TAS, when the temperature rises.

**60. When compared with the volumetric fuel flowmeter, the mass fuel flowmeter takes into account the fuel:**

a) Temperature.

b) Pressure.

c) Density.

d) Dielectrical constant.

**61. When are outboard ailerons (if present) de-activated?**

a) Flaps (and slats) retracted or speed above a certain value

b) Landing gear extended

c) Landing gear retracted

d) Flaps (and/or slats) extended or speed below a certain value

**62. What does the abbreviation 'MLS' mean:**

a) Mean sea level

b) Minimum safe level

c) Minimum sector level

d) Microwave landing system

**63. An aeroplane is in a level turn, at a constant TAS of 300 kt, and a bank angle of 45°. Its turning radius is:(given: g= 10 m/s 2)**

a) 4743 metres.

b) 9000 metres.

c) 2381 metres.

d) 3354 metres.

**64. The transition from SW to NE monsoon in India occurs in**

a) September, October, November

b) February, March, April

c) December, January, February

d) July, August, September

**65. Who in the aviation industry is responsible for flight safety?**

a) Aircrew and Ground crew

b) Aircrew

c) Management, Aircrew, Ground crew and ATC

d) Everyone involved

**66. When, in flight, the needle and ball of a needle-and-ball indicator are on the right, the aircraft is:**

a) Turning right with not enough bank

b) Turning right with too much bank

c) Turning left with not enough bank

d) Turning left with too much bank

**67. The clearance: 'cleared for immediate take-off runway 03' is:**

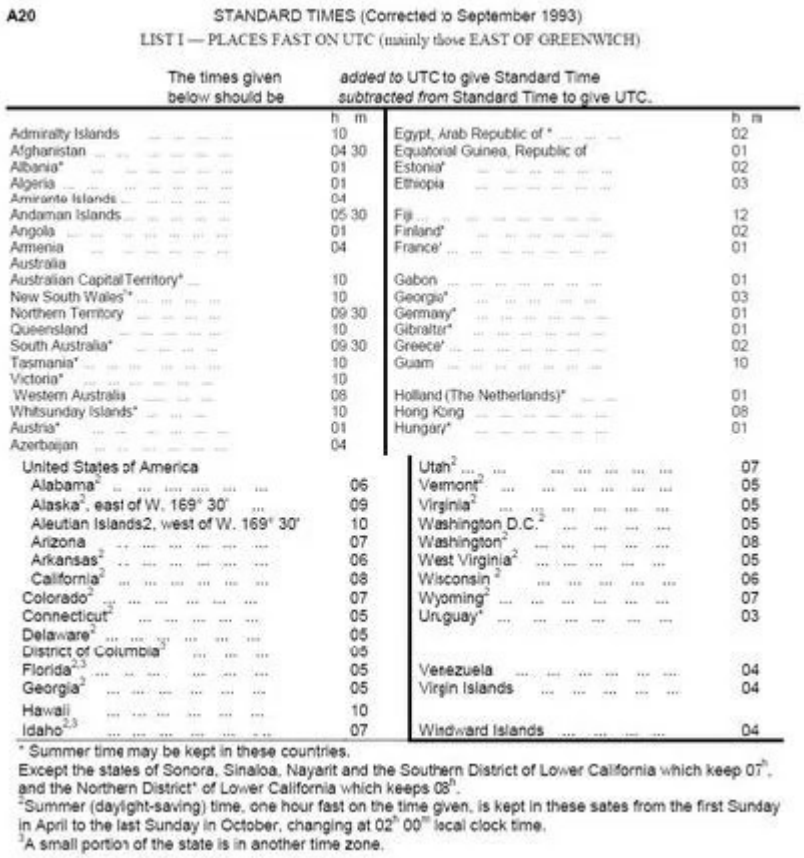
a) An urgency message.

b) An unauthorized message.

c) A flight safety message.

d) A flight regularity message.

**68. When it is 0600 Standard Time in Queensland (Australia) the Standard Time in Hawaii (USA) is:**



A20 STANDARD TIMES (Corrected to September 1993)

LIST I — PLACES FAST ON UTC (mainly those EAST OF GREENWICH)

The times given below should be *added to* UTC to give Standard Time *subtracted from* Standard Time to give UTC.

| | h m | | h m |
|---|---|---|---|
| Admiralty Islands | 10 | Egypt, Arab Republic of * | 02 |
| Afghanistan | 04 30 | Equatorial Guinea, Republic of | 01 |
| Albania* | 01 | Estonia* | 02 |
| Algeria | 01 | Ethiopia | 03 |
| Amirante Islands | 04 | | |
| Andaman Islands | 05 30 | Fiji | 12 |
| Angola | 01 | Finland* | 02 |
| Armenia | 04 | France* | 01 |
| Australia | | | |
| Australian Capital Territory* | 10 | Gabon | 01 |
| New South Wales* | 10 | Georgia* | 03 |
| Northern Territory | 09 30 | Germany* | 01 |
| Queensland | 10 | Gibraltar* | 01 |
| South Australia* | 09 30 | Greece* | 02 |
| Tasmania* | 10 | Guam | 10 |
| Victoria* | 10 | | |
| Western Australia | 08 | Holland (The Netherlands)* | 01 |
| Whitsunday Islands* | 10 | Hong Kong | 08 |
| Austria* | 01 | Hungary* | 01 |
| Azerbaijan | 04 | | |
| United States of America | | Utah[2] | 07 |
| Alabama[2] | 06 | Vermont[2] | 05 |
| Alaska[2], east of W. 169° 30' | 09 | Virginia[2] | 05 |
| Aleutian Islands2, west of W. 169° 30' | 10 | Washington D.C.[2] | 05 |
| Arizona | 07 | Washington[2] | 08 |
| Arkansas[2] | 06 | West Virginia[2] | 05 |
| California[2] | 08 | Wisconsin[2] | 06 |
| Colorado[2] | 07 | Wyoming[2] | 07 |
| Connecticut[2] | 05 | Uruguay* | 03 |
| Delaware[2] | 05 | | |
| District of Columbia[2] | 05 | | |
| Florida[2,3] | 05 | Venezuela | 04 |
| Georgia[2] | 05 | Virgin Islands | 04 |
| Hawaii | 10 | | |
| Idaho[2,3] | 07 | Windward Islands | 04 |

* Summer time may be kept in these countries.
Except the states of Sonora, Sinaloa, Nayarit and the Southern District of Lower California which keep 07h, and the Northern District* of Lower California which keeps 08h.
[2]Summer (daylight-saving) time, one hour fast on the time given, is kept in these sates from the first Sunday in April to the last Sunday in October, changing at 02h 00m local clock time.
[3]A small portion of the state is in another time zone.

LIST III — PLACES SLOW ON UTC (WEST OF GREENWICH)

The times given below should be } subtracted from UTC to give Standard Time added to Standard Time to give UTC.

a) 1200 same day
b) 1000 previous day
c) 0600 same day
d) 0200 previous day

**69. An aircraft whose maximum approved seating configuration is 10 seats must be equipped with:**

a) One hand fire-extinguisher in the cockpit/flight deck and two hand fire-extinguishers in the passengers compartment.
b) One hand fire-extinguisher in the cockpit/flight deck and one hand fire-extinguisher in the passengers compartment.
c) Two hand fire-extinguishers in the cockpit/flight deck and two hand fire-extinguishers in the passengers compartment.
d) Three hand fire-extinguishers in the passengers compartment.

**70. According to the JAR OPS 1, when a commercial transport passenger aircraft is equipped with a door in the flight crew compartment area, this door must include:**

a) A device preventing the flight crew from being locked in the cockpit.

b) A locking system to prevent any unauthorized access.

c) A sealing system which, in case of depressurisation in the compartment area allows the maintenance of the pressure in the cockpit for as long as possible.

d) Distinctive red or yellow coloured markings indicating the access area (in case of a blocked door).

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# Response Scheme

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

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