GENERAL APTITUDE TEST
CBRT FOR THE POST OF ASSISTANT DIRECTOR OF OPERATIONS
20-10-2019 (FN)

1.
Consider the following statements regarding air traffic controllers:
1. The ground controllers work on the runway and are responsible for the separation of aircraft and vehicles operations on the ramp, taxi ways.
2. The local controller is primarily responsible for the separation of aircraft operating within the airport traffic area and those landing on any of the active runways.
3. One of the duties of local controllers is to control taxiways lighting systems.

Which of the above statements is/are correct?
(A) 1 only
(B) 2 only
(C) 2 and 3 only
(D) 1, 2 and 3

2.
A flight path parallel to the landing runway in the direction opposite to landing is called
(A) Downwind
(B) Upwind
(C) Crosswind
(D) Base

3.
Consider the following statements regarding controller duties in air route traffic control centre:
1. Flight data controller is responsible for assisting the other controllers, who actually separate the aircraft.
2. Non Radar controller is responsible to assist the radar controller when separating aircraft appears on the radar display.
3. Radar controller is responsible to separate participating aircraft using a radar-derived display.

Which of the above statements are correct?
(A) 1 and 2 only
(B) 1 and 3 only
(C) 2 and 3 only
(D) 1, 2 and 3

4.
Consider the following statements regarding aircraft entry requirements:
1. ATC clearance is required for both IFR and VFR for class E airspace category.
2. ATC clearance is required for both IFR and VFR for class A airspace category.
3. ATC clearance is required for both IFR and VFR for class B airspace category.

Which of the above statements is/are correct?
(A) 1 and 2
(B) 2 only
(C) 3 only
(D) 2 and 3

5.
Consider the following statements:
An aircraft desiring to enter the other airspace must:

1. be equipped with a two-way radio and obtain an ATC clearance.
2. file a flight plan.
3. be equipped with an altitude reporting transponder.

Which of the above statements is/are correct?

(A) 3 only
(B) 1 and 2 only
(C) 1, 2 and 3
(D) 1 and 3 only

6.
At selected controlled airports where appropriate data have been published, air traffic controllers may use an expanded procedure whereby they may clear a pilot to land and hold short of an intersecting runway, an intersecting taxiway, or some other designated point on runway. This operation is called

(A) Land and hold short operation
(B) Available landing distance
(C) Airport facility directory
(D) Short approach

7.
A touch and go clearance permits an aircraft

(A) to land on runway but does not actually make contact with runway surface.
(B) to perform a landing, touch and go, stop and go, or low approach
(C) to land on runway but to take off again before actually coming to a stop
(D) to make a full stop landing

8.
Consider the following statements regarding ATS airspace in India:

1. Designated airspace within controlled airspace is classified as class A.
2. Designated airspace within air traffic service route segment outside controlled airspace is classified as class F.
3. Airspace outside air traffic service route segment and outside controlled airspace is classified as class G.

Which of the above statements are correct?

(A) 1 and 2 only
(B) 1 and 3 only
(C) 2 and 3 only
(D) 1, 2 and 3

9.
Consider the following statements:
The objectives of air traffic services shall be to:

1. prevent collision between aircraft.
2. expedite and maintain on orderly flow of air traffic.
3. notify appropriate organizations regarding aircraft in need of search and rescue aid, and assist such organizations as required.

Which of the above statements are correct?

(A) 1 and 2 only
(B) 1 and 3 only
(C) 2 and 3 only
(D) 1, 2 and 3

10.
Consider the following statements regarding aviation:

1. ARTCC stands for air route traffic control centers.
2. TRACON stands for terminal radar approach control.
3. MARSA stands for military authority assumes responsibility for separation of aircraft.

Which of the above statements are correct?

(A) 1 and 2 only
(B) 1 and 3 only
(C) 2 and 3 only
(D) 1, 2 and 3

11.
If a radar system with an unambiguous range of 100 Km, and a bandwidth of 0.5 MHz, what is the required Pulse Repetition Frequency (PRF)?

(A) 1100 Hz
(B) 1500 Hz
(C) 1300 Hz
(D) 1600 Hz

12.
Which one of the following is a computer system used as a backup for airport surveillance radar?

(A) Radar data acquisition system
(B) Beacon data acquisition system
(C) Center data processing system
(D) Center radar ARTS presentation

13.
Consider the following statements regarding Airport Surveillance Radar (ASR):

1. ASR-9 is short range radar that detects weather and aircraft within a radius of 60 nautical miles.
2. ASR-11 is used at aircraft to monitor closely spaced parallel runways.
3. ASR-9 is known as dual channel radar.

Which of the above statements are correct?

(A) 1 and 2 only
(B) 1 and 3 only
(C) 1, 2 and 3
(D) 2 and 3 only

14.
Consider the following statements regarding Enhanced Back-Up Surveillance (EBUS):

1. EBUS system replaced the direct access radar channel (DARC) system, which was used as the backup system at domestic ARTCCs.
2. EBUS has all the functionality of the primary radar system including automated flight data processing capability.
3. EBUS uses components from the microprocessor en route automated radar tracking system (MEARTS) application to provide backup radar data processing services.

Which of the above statements are correct?

(A) 1 and 2 only
(B) 1 and 3 only
(C) 1, 2 and 3
(D) 2 and 3 only

15.
Consider the following statements regarding Data Acquisition Subsystem (DAS):

1. It is a peripheral device that receives raw radar data from the primary surveillance radar system.
2. It is a device that receives beacon-derived information from the secondary surveillance system.
3. It is composed of two different subsystems: radar data acquisition system and beacon data acquisition system.

Which of the above statements are correct?

(A) 1 and 2 only
(B) 2 and 3 only
(C) 1 and 3 only
(D) 1, 2 and 3

16.
Consider the following statements regarding Sensitivity Time Control (STC):

1. It is an electronic circuit that automatically controls the receiver's sensitivity to equalize the display intensity of both nearby and distant targets.
2. It reduces the receiver's sensitivity during the initial segment of the listening cycle, when strong echoes from nearby targets are received.
3. It reduces the receiver's sensitivity during the final segment of the listening cycles, when strong echoes from nearby targets are received.

Which of the above statements is/are correct?

(A) 1 only
(B) 2 and 3
(C) 1 and 2
(D) 1 and 3

17.
Consider the following statements regarding Moving Target Detection (MTD):

1. MTD attempts to mitigate blind speed, tangential course, and precipitation display problem in Moving Target Indicator based radar systems.
2. During routine operation of ASR-11, reflected radar energy is processed by MTD system.
3. During routine operation of digital radar, the energy processed by MTD system is stored into computer memory known as random-access memory (RAM).

Which of the above statements are correct?

(A) 1 and 2 only
(B) 2 and 3 only
(C) 1 and 3 only
(D) 1, 2 and 3

18.
Consider the following statements regarding Moving Target Indicator (MTI):

1. It is an electronic circuit used for reducing the ground clutter from the radar screen.
2. It uses phase-change filtering techniques to eliminate any objects that are actually moving.
3. It uses phase-change filtering techniques to eliminate any objects that are not actually moving.

Which of the above statements is/are correct?

(A) 1 only
(B) 1 and 2
(C) 1 and 3
(D) 3 only

19.
Consider the following statements regarding User Request Evaluation Tool (URET):

1. It displays electronic flight information in both a graphical and a tabular display.
2. It operates in the background, monitoring aircraft progress and correlating it with stored flight plan information.
3. When identified, it provides alerts to controllers up to 30 minutes in advance of the potential conflict.

Which of the above statements are correct?

(A) 1, 2 and 3
(B) 2 and 3 only
(C) 1 and 3 only
(D) 1 and 2 only

20.
Consider the following statements regarding Traffic Information Service (TIS):

1. It was designed to provide a lower cost service using existing ground-based infrastructure.
2. It is a ground-based service available to all aircraft equipped with mode-S transponders.
3. It provides escape maneuvering.
4. It uses existing mode-S data links to transmit aircraft position information to the pilot for display in the cockpit.

Which of the above statements are correct?

(A) 1, 2 and 3
(B) 2, 3 and 4
(C) 3 and 4 only
(D) 1, 2 and 4

21.
Which one of the following types of indications is displayed in a signal area owing to the bad state of the manoeuvring area, or for any other reason?

(A) A horizontal red square panel with yellow diagonals
(B) A horizontal red square panel with one yellow diagonal
(C) A horizontal yellow square panel with red diagonals
(D) A horizontal yellow square panel with one red diagonal

22.
Which one of the following types of routes is designed for channeling the flow of traffic?

(A) Air traffic control route
(B) Air traffic service route
(C) Air clearance service route
(D) Air traffic clearance service route

23.
Consider the following statements regarding Remotely Piloted Aircraft Systems (RPAS):

1. RPAS engaged in international air navigation can be operated without appropriate authorization from the state from which the take-off of the Remotely Piloted Aircraft (RPA) is made.
2. RPA shall not be operated over the high seas without prior coordination with the appropriate Airport Traffic Services (ATS) authority.
3. RPAS shall meet the performance and equipment carriage requirements for the specific airspace in which the flight is to operate.

Which of the above statements are correct?

(A) 1, 2 and 3
(B) 1 and 3 only
(C) 1 and 2 only
(D) 2 and 3 only

24.
Consider the following statements regarding runway:

1. Number of longitudinal strips of uniform dimensions required for 23 m runway is 6.
2. Number of longitudinal strips of uniform dimensions required for 30 m runway is 8.
3. Number of longitudinal strips of uniform dimensions required for 45 m runway is 10.

Which of the above statements are correct?

(A) 1 and 2 only
(B) 1 and 3 only
(C) 2 and 3 only
(D) 1, 2 and 3

25.
Consider the following statements regarding estimated surface friction:

1. If runway friction coefficient is 0.40, then estimated surface friction is good.
2. If runway friction coefficient is 0.35, then estimated surface friction is medium.
3. If runway friction coefficient is 0.30, then estimated surface friction is poor.

Which of the above statements are correct?

(A) 1 and 2 only
(B) 2 and 3 only
(C) 1 and 3 only
(D) 1, 2 and 3

26.
Consider the following statements regarding visual ground signals:

1. A horizontal white dumbbell when displayed in a signal area indicates that aircraft are required to land, takeoff and taxi on runways and taxiways only.
2. A horizontal red square panel with one yellow diagonal when displayed in a signal area indicates that landings are prohibited and that the prohibition is liable to be prolonged.
3. Crosses of a single contrasting color, white or yellow displayed horizontally on runways and taxiways or parts thereof indicate an area unfit for movement of aircraft.

Which of the above statements are correct?

(A) 1 and 2 only
(B) 1 and 3 only
(C) 2 and 3 only
(D) 1, 2 and 3

27.
Consider the following statements regarding aviation:

1. Aerodrome control tower is the elevation of the highest point of the landing area.
2. Aerodrome beacon is used to indicate the location of an aerodrome from the air.
3. Hazard beacon is used to designate a danger to air navigation.

Which of the above statements are correct?

(A) 1 and 2 only
(B) 1 and 3 only
(C) 2 and 3 only
(D) 1, 2 and 3

28.
Consider the following statements regarding Areas over which flight by aircraft is prohibited:

1. The Area includes within a radius of 5 Kms from Kalpakam nuclear extending vertically from ground level up to an upper level of 2000 feet.
2. The Area included within a radius of one mile from the Towers of Silence on Malabar hills, Mumbai.
3. The Area near Bhubaneshwar extending vertically from ground level to upper level of 50,000 feet.

Which of the above statements are correct?

(A) 1 and 2 only
(B) 1 and 3 only
(C) 2 and 3 only
(D) 1, 2 and 3

29.
Which one of the following techniques is useful to detect the material failures in aircrafts?

(A) Ultrasound-based techniques
(B) Acoustic-based technique
(C) Cyclic stress based technique
(D) Fatigue based technique

30.
Which of the following functions can be integrated for Flight Management System (FMS)?

1. navigation
2. performance management
3. flight planning
4. three dimensional guidance and control

Select the correct answer using the code given below:

(A) 1, 2, 3 and 4
(B) 1, 2 and 3 only
(C) 2, 3 and 4 only
(D) 1 and 4 only

31.
Consider the following statements regarding bubble memory in flight management computers:

1. A computer incorporates a bubble memory for holding the bulk navigation.
2. A computer incorporates aircraft performance characteristics data bank.
3. A computer incorporates a bubble memory for holding specific navigation and performance data.

Which of the above statements is/are correct?

(A) 1 only
(B) 3 only
(C) 1 and 2 only
(D) 1, 2 and 3

32.
If the forces and moments on the body caused by a disturbance tend initially to return the body towards its equilibrium position, the body is

(A) neutrally stable
(B) statically unstable
(C) dynamically stable
(D) statically stable

33.
The flat-faced CRT of the display unit gives a dual character size presentation of

(A) 21 stroke-written characters per 12 lines
(B) 24 stroke-written characters per 14 lines
(C) 14 stroke-written characters per 24 lines
(D) 12 stroke-written characters per 21 lines

34.
When a large aircraft is being taxied in the vicinity of other aircraft or near terminal buildings, what signal the lineman gives with abruptly extended arms and wands to top of head, crossing wands?

(A) Set brakes
(B) Normal stop
(C) Straight ahead
(D) Emergency stop

35.
Consider the following statements regarding the purpose of Centralized Fault Display System (CFDS):

1. CFDS is to make maintenance task easier.
2. CFDS is to display fault messages in cockpit.
3. CFDS is to permit the flight crew to perform some specific tests.

Which of the above statements is/are correct?

(A) 1 only
(B) 2 and 3 only
(C) 3 only
(D) 1, 2 and 3

36.
Which one of the following information is NOT displayed by engine indication and crew alerting system?

(A) Engine compressor and turbine speeds
(B) Lateral guidance information along with the location of ground facilities
(C) Engine temperature
(D) Engine vibration data

37.
Which one of the following stabilities exists, when the object subject to a disturbance has neither the tendency to return nor the tendency to continue in the displacement direction?

(A) Dynamic stability
(B) Positive static stability
(C) Neutral static stability
(D) Negative static stability

38.
Consider the following statements regarding supercritical airfoil:

1. Supercritical airfoil has a very slight curvature on upper surface.
2. Maximum thickness is much farther back than normal.
3. The airfoil curves downward at the trailing edge.

Which of the above statements are correct?

(A) 1 and 2 only
(B) 1 and 3 only
(C) 2 and 3 only
(D) 1, 2 and 3

39.
Consider the velocity field given by u $= \frac{y}{x^2+y^2}$ and v $= \frac{-x}{x^2+y^2}$. What is the equation of the streamline passing through the point (0, 5)?

(A) $x^2 - y^2 = -25$
(B) $x^2 + y^2 = 25$
(C) $x^2 + y = 5$
(D) $x^2 - y = -5$

40.
Which one of the following changes will be experienced by a supersonic airstream passing through an expansion wave?

(A) The airstream is decelerated; the velocity and Mach number behind the wave are lower.
(B) The static pressure of the airstream behind the wave is increased.
(C) The airstream is accelerated; the velocity and Mach number behind the wave are greater.
(D) The static pressure of the airstream behind the wave is unchanged.

41.
A supersonic airstream passing through the oblique shock wave will experience the changes:

1. The flow direction is changed to flow along the surface of airfoil
2. The static pressure of the airstream behind the wave is decreased.
3. The density of the airstream behind the wave is increased.

Which of the above statements are correct?

(A) 1 and 2 only
(B) 1 and 3 only
(C) 2 and 3 only
(D) 1, 2 and 3

42.
The straight line connecting the leading edge (the forward-most tip) and the trailing edge of the airfoil is called

(A) Chord line
(B) Camber line
(C) Mean line
(D) Maximum camber

43.
Which of the following are the classifications for high-speed flights?

1. Subsonic – the aircraft's maximum Mach number that all local speeds are less than Mach 1.
2. Transonic – the regime where local speeds are greater and less than Mach 1.
3. Supersonic – the aircraft's minimum Mach number when all local speeds are less than Mach 1.

Select the correct answer using the code given below?

(A) 1 and 2 only
(B) 2 and 3 only
(C) 1 and 3 only
(D) 1, 2 and 3

44.
For subsonic and supersonic compressible flow, the freestream Mach number is determined by the ratio of

(A) freestream static pressure to pitot pressure
(B) pitot pressure to freestream static pressure
(C) total pressure to pitot pressure
(D) upstream static pressure to pitot pressure

45.
Which one of the following is NOT a primary flight control?

(A) Ailerons
(B) Flaps
(C) Rudder
(D) Elevator

46.
Consider the following statements regarding classification of beams:

1. Beams supported at more than two sections are known as continuous beams.
2. Beam with one end fixed and other simply supported are known as propped cantilever.
3. A beam with both ends fixed is known as simply support beam.

Which of the above statements are correct?

(A) 1 and 2 only
(B) 2 and 3 only
(C) 1 and 3 only
(D) 1, 2 and 3

47.
Consider the following statements regarding plane strain conditions:

1. All the points in the body undergo displacements in one plane only.
2. All the components of stress are perpendicular to the plane of deformation.
3. Except the normal component, all the other components of stress are perpendicular to the plane of deformation of the body.

Which of the above statements is/are correct?

(A) 1 and 2 only
(B) 1 and 3 only
(C) 1 only
(D) 1, 2 and 3

48.
Consider the following statements regarding the requirements for doors and exits of an aircraft:

1. Closed cabins on all aircraft carrying passengers must be provided with at least one adequate and easily accessible external door.
2. For external doors, it is not necessary to be equipped with devices for locking and for safeguarding against opening in flight.
3. No passenger door may be located in the plane of rotation of an inboard propeller or within 5° thereof as measured from the propeller hub.

Which of the above statements are correct?

(A) 1 and 2 only
(B) 1 and 3 only
(C) 2 and 3 only
(D) 1, 2 and 3

49.
A chordwise member of the wing structure used to give the wing section its shape and also to transmit the air loads from the covering to the spars is called

(A) wing spar
(B) monospar wing
(C) two-spar wing
(D) plain rib

50.
The fuselages should be designed to satisfy which of the following major criteria?

1. Protect the passengers in the event of a crash.
2. Efficiently tie together the power plant, wing, landing gear and tail surface loads.
3. In single engine type airplane, the engine is usually not mounted in the nose of the fuselage.

Select the correct answer using the code given below:

(A) 1 and 2 only
(B) 2 and 3 only
(C) 1 and 3 only
(D) 1, 2 and 3

51.
A line established for locating stations on a vertical line is called

(A) water line
(B) butt line
(C) fuselage station
(D) wing station

52.
Consider the following statements regarding the retractable landing gear:

1. It is carried partially or completely inside the airframe structure to reduce drag.
2. When necessary for landing, the gear is extended by some mechanism.
3. It is normally used with relatively low speed aircrafts.

Which of the above statements is/are correct?

(A) 1 only
(B) 2 only
(C) 1 and 2
(D) 1 and 3

53.
Which of the following are the qualifications of licensee for the issue of aerodrome license?

1. Citizen of India
2. A society registered under the Societies Registration Act, 1860 (21 of 1860)
3. The Central Government or State Government or any Company or any Corporation owned or controlled by either of the said Governments

Select the correct answer using the code given below:

(A) 1 and 2 only
(B) 2 and 3 only
(C) 1, 2 and 3
(D) 1 and 3 only

54.
Consider the following statements regarding flight crew personnel and logging of flight time:

1. Every member of flight crew should maintain a personal log book.
2. All entries in log books shall be made in ink.
3. Log books shall be preserved for not less than 3 years after the date of last entry.

Which of the above statements are correct?

(A) 1, 2 and 3
(B) 1 and 2 only
(C) 2 and 3 only
(D) 1 and 3 only

55.
Consider the following statements regarding flight crew:

1. Crew member is a person assigned by an operator to perform duty on an aircraft during a flight duty period.
2. Cabin crew member is a person assigned to perform pilot tasks during cruise flight, to allow the pilot-in-command or a co-pilot to obtain planned rest.
3. A cruise relief pilot is not allowed to perform pilot tasks during planned rest.

Which of the above statements is/are correct?

(A) 2 only
(B) 1 and 3 only
(C) 1 only
(D) 1, 2 and 3

56.
Consider the following statements regarding the aircraft rules for license issue controls of an aerodrome:

1. Rule 79 defines qualifications of licensee.
2. Rule 83 specifies the validity period of an aerodrome license.
3. Rule 87 defines the information to be included in the aerodrome manual.

Which of the above statements is/are correct?

(A) 1 only
(B) 2 and 3 only
(C) 1, 2 and 3
(D) 2 only

57.
Consider the following statements regarding aerodrome license fee:

1. Rs. 1,00,000 are charged to grant the license for private use.
2. Rs. 5,00,000 are charged to grant the license for public use up to runway length of 5000 feet.
3. The fee chargeable for renewal of license of an aerodrome shall be seventy five percent of the fee chargeable for grant of the license.

Which of the above statements are correct?

(A) 1 and 2 only
(B) 2 and 3 only
(C) 1 and 3 only
(D) 1, 2 and 3

58.
An aerodrome license may be granted for any period NOT exceeding

(A) 12 months
(B) 24 months
(C) 36 months
(D) 60 months

59.
The Airport Authority of India constituted under which section of AAI Act, 1994 (55 of 1994)?

(A) Section 2
(B) Section 3
(C) Section 4
(D) Section 5

60.
Which one of the following rules is considered for preparation of aerodrome manual for getting aerodrome license?

(A) Rule 86A of Aircraft Rule 1937
(B) Rule 81 of Aircraft Rule 1937
(C) Rule 47 of Aircraft Rule 1948
(D) Rule 71 of Aircraft Rule 1954

61.
Consider the following statements regarding educational qualification for different licenses:

1. Minimum educational qualification for Student Pilot's License shall be a pass in class ten from recognized Board.
2. Minimum educational qualification for Flight Radio Telephone Operator's License shall be a pass in class ten from recognized Board.
3. Minimum educational qualification for Student Flight Engineer's License shall be a pass in class ten from recognized Board.

Which of the above statements are correct?

(A) 1 and 2 only
(B) 2 and 3 only
(C) 1 and 3 only
(D) 1, 2 and 3

62.
What are the functions of the air traffic control service?

1. Preventing collisions between aircraft
2. Expediting and maintaining an orderly flow of air traffic
3. Preventing collisions on the Manoeuvring area between aircraft and obstructions

Select the correct answer using the code given below:

(A) 1 and 2 only
(B) 2 and 3 only
(C) 1 and 3 only
(D) 1, 2 and 3

63.
Consider the following statements regarding aerodrome design:

1. Non-intersecting runways whose extended center lines have an angle of convergence/divergence of 90 degrees or less are known as Near-Parallel runways.
2. Manoeuvring area is a part of an aerodrome used for the take-off, landing and taxiing of aircraft, excluding aprons.
3. A symbol or group of symbols displayed on the surface of the movement area in order to convey aeronautical information is known as Marking.

Which of the above statements are correct?

(A) 1, 2 and 3
(B) 2 and 3 only
(C) 1 and 2 only
(D) 1 and 3 only

64.
Which one of the following organizations recommends the standards for the operation and management of civil-use airports internationally?

(A) International Federal Aviation Organization
(B) International Airports Authority
(C) International Civil Airports Organization
(D) International Civil Aviation Organization

65.
In which year, the International Air Transport Association (IATA) was founded?
(A) 1945
(B) 1946
(C) 1947
(D) 1948

66.
In structural design of airport pavements, which one of the following types of pavement is known as flexible pavement?
(A) A pavement consisting of slab of Portland cement and concrete.
(B) A pavement consisting of a mixture of bituminous material and aggregate placed on high quality granular materials.
(C) A pavement consisting of rubber and coal tar.
(D) A pavement consisting of mixture of cement and plaster of paris.

67.
The Aerodrome Emergency Plan document should include the following:
1. A grid map of the aerodrome and its immediate vicinity.
2. Agencies involved in the plan.
3. Responsibility and role of each agency, the emergency operations centre and the command post, for each type of emergency.

Which of the above statements is/are correct?
(A) 2 only
(B) 3 only
(C) 1, 2 and 3
(D) 1 and 3 only

68.
Consider the following statements regarding clearways:
1. The origin of a clearway should be at the end of the take-off run available.
2. The length of a clearway should not exceed half the length of the take-off run available.
3. A clearway should extend laterally to a distance of at least 85 m on each side of the extended centre line of the runway.

Which of the above statements are correct?
(A) 1, 2 and 3
(B) 2 and 3 only
(C) 1 and 3 only
(D) 1 and 2 only

69.
The threshold is identified at large airports by a complete line of which one of the following color lights extending across the entire width of the runway?
(A) Red
(B) Violet
(C) Green
(D) White

70.
In the context of obstacle limitation surfaces, the limits of the conical surface shall comprise
(A) a lower edge coincident with the periphery of inner horizontal surface.
(B) an upper edge located at a specific height below the inner horizontal surface.
(C) a lower edge coincident with the periphery of outer horizontal surface.
(D) an upper edge coincident with the periphery of inner horizontal surface.
71.
A minimum set of parameters required to define location and orientation of the local reference system with respect to the global reference system/frame is called
(A) Geodetic datum
(B) Geoid undulation
(C) Geoid
(D) Barrette
72.
A system designed to decelerate an aeroplane overrunning the runway is called
(A) Clearway
(B) Arresting system
(C) Apron
(D) Barrette
73.
High altitude VORs (VHF Omnidirectional Ranges) are used by aircraft operating between
(A) 5000 feet to 10000 feet, at ranges up to 200 nautical miles
(B) 10000 feet to 18000 feet, at ranges up to 200 nautical miles
(C) 18000 feet to 60000 feet, at ranges up to 200 nautical miles
(D) 60000 feet to 90000 feet, at ranges up to 200 nautical miles
74.
Consider the following statements regarding long range navigation (LORAN):
1. LORAN-A system consists of a master station and a slave station.
2. LORAN-C ground stations consist of one master station and ten slave stations.
3. LORAN-D is a short range military version used for pin point navigation.

Which of the above statements are correct?
(A) 1 and 2 only
(B) 1 and 3 only
(C) 2 and 3 only
(D) 1, 2 and 3
75.
Consider the following statements regarding rotating beacons used at airports:
1. Green and White indicates a land airport
2. White and Yellow indicates a water airport
3. Yellow and Green indicates a military airport

Which of the above statements are correct?
(A) 1 and 2 only
(B) 1 and 3 only
(C) 2 and 3 only
(D) 1, 2 and 3

76.
Which one of the following type of lighting systems is used to delineate the flight path that should be used by a pilot approaching a specific runway?

(A) omnidirectional approach lighting system
(B) runway end identifier lights
(C) medium-intensity approach lighting system
(D) simplified approach lighting system

77.
Which one of the following aircraft is the first transport aircraft that uses electrically driven air cycle air conditioning and cabin pressurization function, with fresh air brought onboard via dedicated cabin air inlets?

(A) Boeing 737
(B) Boeing 747
(C) Boeing 787
(D) Boeing 777

78.
Consider the following statements regarding aviation:

1. Wide area augmentation system uses a network of precisely located ground reference stations that monitor transmitted global positioning system satellite signals.
2. Aircraft using ground based augmentation system receive augmentation information directly from a local ground based transmitter.
3. The inertial navigation system committee was found to develop a strategy that would include new concept of aircraft communication, navigation and air traffic management.

Which of the above statements are correct?

(A) 1 and 2 only
(B) 2 and 3 only
(C) 1 and 3 only
(D) 1, 2 and 3

79.
The frequency shift observed at a receiver due to any relative motion between transmitter and receiver is called

(A) Radio frequency shift
(B) Controller frequency shift
(C) Doppler shift
(D) Digital link shift

80.
Consider the following statements regarding a pressure type altimeter calibrated in accordance with the standard atmosphere:

1. When set to a “Query Nautical Height (QNH)” altimeter setting, will indicate altitude.
2. When set to a “Query Field Elevation (QFE)” altimeter setting, will indicate height above the QFE reference datum.
3. When set to a pressure 1013.2 hPa, may be used to indicate flight level.

Which of the above statements are correct?

(A) 1 and 3 only
(B) 1 and 2 only
(C) 1, 2 and 3
(D) 2 and 3 only

81.
Consider the following statements regarding the air navigation systems:

1. Inertial Navigation System (INS) is totally autonomous navigation system.
2. Doppler Navigation System (DNS) is fully autonomous system like INS.
3. Radio Navigation System (RNS) does not depend on a network of ground-based transmitters.

Which of the above statements is/are correct?

(A) 1 and 2 only
(B) 2 and 3 only
(C) 3 only
(D) 1, 2 and 3

82.
Consider the following statements regarding air traffic control information:

1. Flight information service is a service provided for the purpose of giving flight information service and alerting service.
2. Flight information center is a unit established to provide flight information service and alerting service.
3. Flight information region is airspace of defined dimensions within which flight information service and alerting service are provided.

Which of the above statements is/are correct?

(A) 1 and 2 only
(B) 2 and 3 only
(C) 3 only
(D) 1, 2 and 3

83.
Consider the following statements regarding the air route traffic control centers:

1. The position responsible for compiling statistical data and forwarding flight plan data is radar flight data position.
2. The position that is in direct communication with aircraft is radar associate position.
3. The position responsible for ensuring separation, initiating control instructions, managing flight strip information, and assisting radar position with coordination is the radar coordinator position.

Which of the above statements is/are correct?

(A) 1 only
(B) 2 and 3 only
(C) 1, 2 and 3
(D) 2 only

84.
Which one of the following landing systems is designed to provide the pilot with an approach path that is perfectly aligned with the runway centerline?

(A) Global Navigation Landing System
(B) Surveillance Landing System
(C) Instrument Landing System
(D) Terminal Landing System

85.
Consider the following statements regarding provisions of Control Service AIP (India):

1. Radio communication shall be established with the appropriate aerodrome prior to taxiing for departure.
2. While operating in class ‘C’ and ‘D’ airspace only direct controller-pilot communication is permitted.
3. For Visual Flight Rules operation in class ‘C’ and ‘D’ airspace, aircraft shall be equipped with appropriate two-way VHF radio apparatus.

Which of the above statements are correct?

(A) 1 and 2 only
(B) 1 and 3 only
(C) 2 and 3 only
(D) 1, 2 and 3

86.
Consider the following statements regarding air traffic service route in India:

1. Aircraft shall obtain air traffic control clearance from the appropriate air traffic service unit at least 60 minutes prior to entering controlled airspace.
2. Minimum flight altitudes providing 1000 feet clearance from the highest obstacle within the route width are indicated in the appropriate column.
3. All aircraft are forbidden to operate within 15 NM of the international border of India unless specifically permitted or except when following the ATS route or operating to and from any aerodrome situated within 15NM of the international border of India.

Which of the above statements are correct?

(A) 1 and 2 only
(B) 1 and 3 only
(C) 2 and 3 only
(D) 1, 2 and 3

87.
Consider the following statements regarding automatic terminal information service:

1. The information communicated shall relate to a single aerodrome.
2. The information communicated shall be updated immediately when a significant change occurs.
3. The meteorological information shall be extracted from the global meteorological routine.

Which of the above statements are correct?

(A) 1 and 2 only
(B) 1 and 3 only
(C) 2 and 3 only
(D) 1, 2 and 3

88.
Consider the following statements regarding air traffic control service:

1. Air traffic control service shall be provided to all IFR flights in airspace classes A, B, C, D and E.
2. Air traffic control services shall be provided to all VFR flights in airspace classes F and G.
3. Air traffic control service shall be provided to all special VFR flights.

Which of the above statements are correct?

(A) 1 and 2 only
(B) 1 and 3 only
(C) 2 and 3 only
(D) 1, 2 and 3

89.
The category of airspace within which the pilots provide all separation, is called

(A) controlled airspace
(B) positive controlled airspace
(C) special use airspace
(D) uncontrolled airspace

90.
Which one of the following facilities is an ATC facility that uses radar and non radar capabilities to provide control services to aircraft arriving, departing and transiting airspace in a terminal area?

(A) Flight Radar Approach Control
(B) Runway Radar Approach Control
(C) Terminal Radar Approach Control
(D) Navigation Radar Approach Control

91.
Consider the following statements regarding phrases and abbreviations used by air traffic controllers while performing their duties:

1. 'L' stands for cleared to airport of intended landing.
2. 'Q' stands for cleared to fly specified sectors of a navaid.
3. 'Z' stands for tower jurisdiction

Which of the above statements are correct?

(A) 1 and 2 only
(B) 1 and 3 only
(C) 2 and 3 only
(D) 1, 2 and 3

92.
Consider the following statements regarding aircraft call sign:

1. R23956 call sign is used for army
2. VV1963 call sign is used for navy
3. A24367 call sign is used for air force

Which of the above statements are correct?

(A) 1 and 2 only
(B) 2 and 3 only
(C) 1 and 3 only
(D) 1, 2 and 3

93.
Consider the following statements regarding coordinated universal time (UTC):

1. UTC is same as local time in Greenwich, England, which is located on the 30° line of longitude.
2. UTC was previously known as Greenwich Mean Time (GMT).
3. To convert local time to UTC, convert local time to a 24-hour clock, and then add the required time difference.

Which of the above statements are correct?

(A) 1 and 2 only
(B) 2 and 3 only
(C) 1 and 3 only
(D) 1, 2 and 3

94.
Consider the following statements regarding cruise clearance:

1. It is used by air traffic controllers to authorize an IFR aircraft to operate at any altitude between the assigned altitude and minimum IFR altitude.
2. The clearance permits the pilot to level off and operate at any intermediate altitude within this assigned block of airspace.
3. It authorizes the pilot to conduct any instrument approach procedure published for the destination airport.

Which of the above statements are correct?

(A) 1 and 2 only
(B) 2 and 3 only
(C) 1 and 3 only
(D) 1, 2 and 3

95.
Consider the following statements regarding wind direction and velocity:

1. Wind direction at airport is always determined in reference to magnetic north.
2. Wind direction at airports is always determined in reference to magnetic south.
3. The wind direction is always rounded off to the nearest 10°.

Which of the above statements is/are correct?

(A) 1 and 3
(B) 2 and 3
(C) 1 only
(D) 2 only

96.
Consider the following statements regarding the duties of the ground controller:

1. Issuing clearance to IFR and participating VFR aircraft.
2. Receiving and relaying IFR departure clearances.
3. Controlling taxiway lighting systems.

Which of the above statements are correct?

(A) 1 and 2 only
(B) 2 and 3 only
(C) 1 and 3 only
(D) 1, 2 and 3

97.
Consider the following statements regarding radar associate/non-radar controller:

1. The radar controller must be prepared to assume aircraft separation responsibility if the radar display should malfunction.
2. The non-radar controller's duties are similar to those performed by the B controller in the old air traffic control centers.
3. The non-radar controller's duties include updating the flight progress strips to accurately reflect every aircraft's position, altitude, and route of the flight.

Which of the above statements is/are correct?

(A) 1 and 2
(B) 2 and 3
(C) 1 and 3
(D) 1 only

98.
Consider the following statements regarding aircraft altitudes:

1. When the aircraft is within 1000 feet of the assigned altitude, the pilot should attempt to decrease the climb or descent rate to approximately 1000 feet per minute.
2. If the controller requires the pilot to change altitude at the aircraft's optimal rate of climb or descent, the controller should precede the clearance with the phrase "descend now".
3. If the phrase "at pilot's discretion (PD)' is used by the controller in conjunction with an altitude assignment, the pilot is given the option of when to begin the climb or descent.

Which of the above statements is/are correct?

(A) 2 and 3
(B) 1 only
(C) 1 and 3
(D) 1 and 2

99.
While operating within MARSA airspace, who is responsible for seeing and avoiding any participating military aircraft?

(A) VFR pilot
(B) IFR pilot
(C) Civilian pilot
(D) Military pilot

100.
Consider the following statements regarding runway numbers:

1. The runway's number is its magnetic heading rounded to the nearest 90° with leading and trailing zeros removed.
2. Runway designations are always prefixed with the word "runway" followed by runway number and a suffix.
3. If two or three runways are constructed parallel to each other, the suffix L for "left", R for "right", and C for "center" are used to differentiate the runways from one another.

Which of the above statements is/are NOT correct?

(A) 3 only
(B) 2 and 3
(C) 1 only
(D) 1 and 2