AIRMANSHIP

VSA (1mark)

Multiple Choice Questions

1. A defined area on land or water including any buildings, installations and equipment intended to be used either wholly or in part for the arrival, departure and movement of ac.
(a) Airfield (b) Airport
(c) **Aerodrome** (d) Runway

2. An area of land used for takeoff and landing of aircraft and excludes buildings and installations.
(a) **Airfield** (b) Airport
(c) Aerodrome (d) Runway

3. Mainly used for civil flying establishments which handle international air traffic and, therefore, have a custom house, other travel amenities – port facilities in fact.
(a) Airfield (b) **Airport**
(c) Aerodrome (d) Runway

4. A number expressing the relative effect of an ac load on a pavement for specified sub-grade strength.
(a) Airfield (b) **Aircraft Classification Number**
(c) Aerodrome (d) Runway

5. It is a report passed during the course of a flight in conformity with requirements for position, operational, or meteorological reporting in the AIREP or POMAR forms.
(a) **Air report** (b) Airport
(c) Air route (d) Runway

6. The navigable airspace between two points, identified to the extent necessary for the application of flight rules.
(a) Air report (b) Airport
(c) **Air route** (d) Runway

7. Service provided to ensure separation in-so-far as possible between ac which are operating on an IFR flight plan, outside control areas but within advisory routes or advisory areas.
(a) Air report (b) Airport
(c) Air route (d) **Air traffic advisory report**

8. A control area or portion thereof established in the form of a corridor equipped with radio navigational aids.

(a) **Air way** (b) Heading
(c) Air route (d) Height

9. The direction in which the longitudinal axis of an aircraft is pointed usually expressed in degrees from North (magnetic).

(a) **Heading** (b) Air way
(c) Air route (d) Runway

10. The vertical distance of a level, a point or an object considered as appoint, measured from a specified datum.

(a) Heading (b) **Height**
(c) Air route (d) Runway

11. An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is restricted in accordance with specified conditions.

(a) Prohibited area (b) Airport
(c) **Restricted area** (d) Runway

12. Aerodrome pressure corrected for temperature. When set on the altimeter on the ground, the Altimeter should read

(a) Two (b) **Zero**
(c) Six (d) Nine

13. A service provided to notify appropriate organizations regarding ac in need of search and rescue aid, and assist such organizations as required.

(a) **Alerting service** (b) Altitude
(c) Ceiling (d) Distress message

14. The vertical distance of a level, a point or object considered as a point measured from mean sea level (MSL).

(a) Alerting service (b) **Altitude**
(c) Ceiling (d) Distress message

15. The height above ground or water of the base of the lowest layer of cloud below 6,000 meters (20,000') covering more than half the sky.

(a) Alerting service (b) Altitude
(c) **Ceiling** (d) Distress message

16. Emergency message to be used when an aircraft is threatened by serious or imminent danger and the crew is in need of immediate assistance.

(a) Alerting service (b) Altitude
(c) Ceiling (d) **Distress message**

17. The vertical position of a point or a level, above, on or affixed to the surface of the earth, measured from mean sea level.

(a) Heading (b) Height
(c) Ceiling (d) **Elevation**

18. A surface of constant atmospheric pressure which is related to a specific pressure datum 1013.2 mb and is separated from other such surfaces by specific pressure intervals.

(a) Heading (b) Height
(c) **Flight level** (d) Elevation

19. Specified information provided to Air Traffic Service Units, relative to the intended flight or portion of a flight of an ac.

(a) Heading (b) Height
(c) Ceiling (d) **Flight plan**

RULES OF THE AIR

1. Visual Meteorological Conditions are said to exist when the prevailing visibility, distance from cloud, and ceiling are equal to or better than in Flight the criteria is

(a) Visibility: 2 nm / 8 km (b) Visibility: 8 nm / 20 km
(c) Visibility: 3 nm / 8 km (d) **Visibility: 5 nm / 8 km**

2. In the route to be flown aircraft shall be equipped with suitable instruments and with

(a) Interment aids (b) Kitchen items
(c) **Navigational aids** (d) Security aids

3. When two aircrafts are on the paths which cross, the aircraft which has the other on its right is to give way is known as

(a) Overtaking (b) **Converging**
(c) Emergency landing (d) Landing

4. The airfield circuit is the airspace extending up to

(a) 1500 ft (b) 2000 ft
(c) 1800 ft (d) **3000 ft**

CIRCUIT PROCEDURES

1. A pattern for traffic movement has been established for use at all aerodromes it is called a

(a) Upwind side (b) Circuit joining crosswind
(c) **Traffic circuit** (d) Downwind leg

2. The area on the opposite side of the landing runway from the downwind leg is known as

(a) **Upwind side** (b) Circuit joining crosswind
(c) Traffic circuit (d) Downwind leg

3. A corridor, lying within the airspace between the centre of the landing runway and its upwind end, linking the upwind side and the downwind leg is known as

(a) Upwind side (b) **Circuit joining crosswind**
(c) Traffic circuit (d) Downwind leg

4. A flight path, opposite to the direction of landing, which is parallel to and at a sufficient distance from the landing runway to permit a standard rate –one turn to the base leg is known as

(a) Upwind side (b) Circuit joining crosswind
(c) Traffic circuit (d) **Downwind leg**

5. A flight path at right angles to the direction of landing and sufficiently downwind of the approach end of the landing run-way to permit at least a ¼ mile final approach leg after completion of a standard rate –one turn to final approach is known as

(a) Upwind side (b) Circuit joining crosswind
(c) **Base leg** (d) Downwind leg

6. Is a flight path in the direction lf landing, commencing at least ¼ mile from the runway threshold, wherein an airplane is in line with the landing runway and descending towards the runway threshold.

(a) Upwind side (b) **Final approach leg**
(c) Base leg (d) Downwind leg

7. The traffic circuit at controlled airport is consists of the cross wind leg, a downwind leg, a base leg and

(a) Air route (b) **Final approach leg**

(c) Length leg (d) Upwind leg

8. You must have landing clearance prior to
(a) Take off (b) **Landing**
(c) Taxing (d) Overtaking

ATC RT PROCEDURE

1. Services provided for the safe and efficient conduct of flight are termed as
(a) Flight Information Service (b) Area Control Service
(c) **Air traffic services** (d) Alerting Service

2. The ATS include the following
(a) Flight Information Service (b) Area Control Service
(c) Air traffic services (d) **All three services**

3. ATS service for controlled flights in control areas is known as
(a) Flight Information Service (b) **Area Control Service**
(c) Air traffic services (d) All three services

4. ATC service for arriving or departing controlled flights is known as
(a) Flight Information Service (b) Area Control Service
(c) Air traffic services (d) **Approach Control Service**

5. To notify appropriate organisations regarding aircraft in need of search and rescue and assist such organisations when required is given by
(a) Flight Information Service (b) Area Control Service
(c) Air traffic services (d) **Alerting Service**

6. A unit established to provide air traffic control service to aerodrome traffic is known as
(a) **Aerodrome Control Tower** (b) Area Control Service
(c) Air traffic services (d) Alerting Service

7. A unit established to provide flight information service is known as
(a) **Flight Information Centre** (b) Area Control Service
(c) Air traffic services (d) Alerting Service

8. An airspace of defined dimensions extending upwards from specified limit above the earth, within which control service is provided to controlled flights is
(a) Control zone (b) **Control area**
(c) Aerodrome traffic zone (d) Advisory area

9. A designated area within a flight information region where air traffic advisory service is available is known as

(a) Control zone (b) Control area
(c) Aerodrome traffic zone (d) **Advisory area**

10. In radio communication alphabet A is known as in ATC RT procedure

(a) Bravo (b) X-ray
(c) **Alpha** (d) Papa

AIRMANSHIP

TRUE & FALSE

1. Airmanship is a study of rules and regulations which must not be followed both on the ground and in air to ensure safety and proper discipline in flying. **(F)**

2. Airmanship does not helps to inculcate the sense of discipline amongst pilots and other crew members. **(F)**

3. Airmanship helps to inculcate the sense of discipline amongst pilots and other crew members. **(T)**

4. Airmanship helps the pilot to know the standard procedures laid down for the airfield on which he is operating. **(T)**

5. Good airmanship ensures a pilot at his best, when the situation is at its worst. **(T)**

6. A defined area on land or water including any buildings, installations and equipment intended to be used either wholly or in part for the arrival, departure and movement of ac is known as aerodrome. **(T)**

7. The airfield refers to an area of land used for takeoff and landing of aircraft and excludes buildings and installations. **(T)**

8. The aerodrome traffic one is defined in degrees, minutes and seconds of latitude and longitude. **(T)**

9. The navigable airspace between two points, identified to the extent necessary for the application of flight rules is known as air report. **(F)**

10. The direction in which the longitudinal axis of an aircraft is pointed usually expressed in degrees from North (magnetic) is known as heading. **(T)**

11. Aerodrome pressure corrected for temperature. When set on the altimeter on the ground, the Altimeter should read zero. **(T)**

12. The vertical distance of a level, a point or object considered as a point measured from mean sea level (MSL)is known as ceiling. **(T)**

RULES OF THE AIR

1. In visual meteorological conditions the flight criteria for visibility is 5 nm / 8 km. **(T)**

2. In visual meteorological conditions the flight criteria for visibility is 12 nm / 25 km. **(F)**

3. Unless authorised by the appropriate ATS authority, VFR flight shall not be operated between sunset and sunrise. **(T)**

4. Unless authorised by the appropriate ATS authority, VFR flight shall be operated between sunset and sunrise. **(F)**

5. VFR flights shall take off or land at an aerodrome or enter the aerodrome traffic zone/pattern when the ground visibility and or the cloud ceiling are less than that specified for VMC in the laid down orders. **(F)**

6. VFR Flights, specially authorised can be permitted even in weather conditions below VMC, subject to obtaining ATC clearance. **(T)**

7. VFR Flights except those operated in the immediate vicinity of the aerodrome, shall not be operated at night. **(T)**

8. A pilot may not be allowed to fly in accordance with the instrument flight rules in visual meteorological conditions. **(F)**

9. Aircraft shall be equipped with suitable instruments and with navigational aids appropriate to the route to be flown. **(T)**

10. An IFR flight operating within specified areas or along specified routes outside controlled airspace shall maintain a listening out watch on the appropriate radio frequency and establish two way communication as necessary, **(T)**

11. Aircraft in the final stage of landing have the right of way over aircraft in the air and on the ground. Sub para (a) does not apply to this rule. **(T)**

12. The captain of an aircraft using civil aerodrome is to comply with the civil procedures in force at that aerodrome. **(T)**

CIRCUIT PROCEDURES

1. A pattern for traffic movement for use at all aerodromes is called a traffic circuit. **(T)**

2. The upwind side is the area on the opposite side of the landing runway from the downwind leg. Approach should be made into this area at or above circuit height. **(T)**

3. The base leg is the area on the opposite side of the landing runway from the downwind leg. Approach should be made into this area at or above circuit height. **(F)**

4. The tower controller will advise the runway in use, wind direction and speed, altimeter setting and any other pertinent information and then will clear you to enter the circuit. **(T)**

5. You must not have landing clearance prior to landing. **(F)**

6. After landing you should clear the runway without delay by continuing forward to the nearest available taxi strip or turn off point. **(T)**

7. Always listen to the ATIS before contacting the tower and then advice the tower that you have the ATIS information. **(T)**

ATC RT PROCEDURE

1. As a Air Wing NCC cadet must not know about ATC &RT procedure prior to start flying. **(F)**

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2. Services provided for the safe and efficient conduct of flight are termed as air traffic services. **(T)**

3. Objectives of Air Traffic Services are to prevent collision between aircraft and to provide advice and information useful for the safe and efficient conduct of flights. **(T)**

4. The ATS include the following:(a) Air Traffic Control Services (b) Flight Information Service (c) Air Traffic Advisory Service (d) Alerting Service. **(T)**

5. ATS service is for not controlled flights in control areas. **(F)**

6. ATC services for aerodrome traffic. **(T)**

7. A service provided within advisory airspace to ensure separation, in so far as possible, between aircraft which are operating in IFR flight plans. **(T)**

8. Alerting Service provided to notify appropriate organisations regarding aircraft in need of search and rescue and assist such organisations when required. **(T)**

9. When different airways approach in the vicinity of one more major aerodromes, the resultant terminal airspace is protected and control area is established. Such controlled areas at the confluence of airways are called “Terminal Manoeuvring Areas” (TMA). (T)

10. Instruction regarding the transfer of communication will normally be given to aircraft 20 minutes before the ETA over transfer point. **(F)**

AVIATION MEDICINE

1. **Hypoxia** comes on without warning of any kind, supplementary oxygen must be available in any aircraft that will be flown above 10,000 Feet. **(T)**

2. Hypoxia can not be defined as a lack of sufficient oxygen in the body cells or tissues. **(F)**

3. The first evidence of hypoxia occurs at 5000feet in the form of diminished night vision. Instruments and maps are miss read , dimly lit ground features are misinterpreted. **(T)**

4. At 10000 feet Cyanosis (blue discoloring of the finger nails) is first noticed. **(F)**

5. At 18000 feet, primary shocks set in and the individual loses consciousness within minutes. **(T)**

6. Because of the change in barometric pressure during ascent and the descent, gases trapped in certain body cavities expand or contract. **(T)**

7. The ear is composed of five sections. **(F)**

8. Some times it is advisable to use the **Valsava technique**, that is, to close the mouth, hold the nose and blow gently. **(T)**

9. Fatigue is not caused by many things: lack of sleep, poor nutrition, stretch, prolonged and repeated flights, **(F)**

10. Acute fatigue is easily treated by a meal and a good sleep. **(T)**

11. Chronical fatigue is more serious and is caused by difficult or stressful work with inadequate rest and is often aggravated disturbed circadian rhythms. **(T)**

12. Frequent small meals to keep up the blood sugar relieve fatigue. **(T)**

SURVIVAL

1. The pattern of survival depends upon one of the factor is location of aids. **(T)**

2. One of the factors promoting chances of survival is discourage. **(F)**

3. One of the factors promoting chances of survival is luck. **(T)**

4. Factors Reducing Chances of Survival are panic, fear, loneliness, boredom fear of unknown, darkness and jungle animals. **(T)**

5. Signalling so as to indicate your own location and help rescue team in locating the survivors is done by using mini flare or radio sets provided with the survival pack. **(T)**

6. During trekking do not Avoid swampy ground. **(F)**

7. When camping do not choose a site close to sources of water, food and solid ground, taking whatever natural protection is available from the weather. **(F)**

8. Avoid areas where there is dead and decaying vegetation. **(T)**

9. All water should be purified, using the water sterilizing tables provided or boiling for at least three minutes. **(T)**

10. There are some sources of water which do not require purification as rain water. **(T)**

11. The food eaten by monkey can not be considered as generally fit for human consumption. **(F)**

12. Large quantities of water should be taken to replace lost body fluids. **(T)**

13. They should pull off as they leave their jaws in the bite which will cause a festering sore. **(F)**

14. Loosen the tourniquet every 10 – 15 minutes for 2- 3 minutes in case of a snake bite. **(T)**

15. Bamboo thrown on a fire will burn with a loud noise resemble gun shots sufficient to drive away animals. **(T)**

16. Keep all sanitary arrangements clear of the shelter or camp. **(T)**

17. Use airsickness or seasickness tablets as early as possible and repeat at every 6-8 hrs. **(T)**

18. Eat and drink too much while sea sick. **(F)**

19. Glare from sky and sea water causes itching watering and irritation of eyes can be easily prevented by using goggles, visors or antiglare sheets provided. **(T)**

20. The survival packs are basically two types- Fighter Type and Transport / Helicopter type. **(T)**

21. Every survival pack has a booklet for guidance. Read it as soon as possible. **(T)**

AVIATION MEDICINE

1. **Hypoxia** comes on warning of any kind, supplementary oxygen must be available in any aircraft that will be flown above 10,000 Feet

(a) To (b) **Without**
(c) Before (d) From

2. The retina of the eye is actually an outcropping of the
(a) Nose (b) Ear
(c) **Brain** (d) Heart

3. At which height the first evidence of hypoxia occurs in the form of diminished night vision.
(a) 10000 ft (b) 3000 ft
(c) 4000 ft (d) **5000 ft**

4. At 10000 feet after how many hrs a pilot can feel fatigue
(a) 2 hrs (b) 3 hrs
(c) **4 hrs** (d) 6 hrs

5. A pilot can feel fatigue due to reduced supply of
(a) Carbon (b) **Oxygen**
(c) Nitrogen (d) Hydrogen

6. There is dimming of vision, tremor of hands, clouding of thought and memory and errors in judgment at which height

(a) 10000 ft (b) **14000 ft**
(c) 40000 ft (d) 15000 ft

7. The conditions caused by changing barometric pressure are known as
(a) Valsava technique (b) Barotraumas
(c) Ear block (d) **Dysbarisms**

8. Any physical damage that results is called a
(a) Valsava technique (b) **Barotraumas**
(c) Ear block (d) Dysbarisms

9. The ear is composed of three sections
(a) Five sections (b) Four section
(c) three sections (d) Two sections

10. To close the mouth, hold the nose and blow gently is known as
(a) **Valsava technique** (b) Barotraumas
(c) Ear block (d) Dysbarisms

11. Acute fatigue is easily treated by a meal and a good sleep
(a) **A meal and a good sleep** (b) Night flights
(c) Work and family (d) Stressful work

12. How many types of fatigue is there
(a) **2** (b) 3
(c) 4 (d) 6

SURVIVAL

1. The instinct to survival is mainly depends on how many factors
(a) **2** (b) 3
(c) 4 (d) 6

2. One of the important aids to survival is
(a) Un will to survive (b) Prior knowledge of terrain
(c) Pre Flight plan (d) Discourage

3. How many types of factors promoting chances of survival
(a) 2 (b) 3
(c) 4 (d) **6**

4. How many types of factors reducing chances of survival
(a) **2** (b) 3
(c) 4 (d) 6

5. How many stages are there in survival
(a) 2 (b) 3

(c) **4** (d) 6

6. By which mean you can indicate your own location and help rescue team in locating the survivors
(a) Entering in Jungle (b) **Signalling**
(c) Sleeping (d) Eating

7. How many types of survival is there
(a) **2** (b) 3
(c) 1 (d) 4

8. All water should be purified by boiling for at least how many minutes
(a) 2 (b) **3**
(c) 1 (d) 4

9. Basically there are how many types of survival kits
(a) **2** (b) 3
(c) 1 (d) 4

AIRMANSHIP

Fill in the blanks

1. **Airmanship** is a study of rules and regulations which must be followed both on the ground and in air to ensure safety and proper discipline in flying.

2. A defined area on land or water including any buildings, installations and equipment intended to be used either wholly or in part for the arrival, departure and movement of ac is known as **Aerodrome**.

3. The **airfield** refers to an area of land used for takeoff and landing of aircraft and excludes buildings and installations.

4. **Airport** is mainly used for civil flying establishments which handle international air traffic.

5. **Aerodrome Reference Point (ARP)** is a designated geographical location of a single runway aerodrome, normally taken as the geometrical centre of the runways or runway.

6. The ARP is defined in **degrees, minutes**, **seconds of latitude and longitude.**

7. **Aircraft Classification Number (ACN)** is a number expressing the relative effect of an ac load on a pavement for specified sub-grade strength.

10. **Aircraft Classification Number (ACN)** is a number expressing the relative effect of an ac load on a pavement for specified sub-grade strength.

11. Airspace of defined dimensions within which the ready identification, location and control of ac is required is known as **Air Defence Identification Zone**.

12. It is a report passed during the course of a flight in conformity with requirements for position, operational, or meteorological reporting in the AIREP or POMAR forms is known as **Air Report**.

13. The navigable airspace between **two** points, identified to the extent necessary for the application of flight rules is known as **Air Route**.

14. **Air Traffic Control Centre** is to provide flight information service within a flight information region.

15. **Air Traffic Control Centre** is to provide alerting service for search and rescue within its flight information region.

16. **Air Traffic Control Clearance** gives authorisation for an aircraft to proceed under conditions specified by an air traffic control unit.

17. Air Traffic Control Services are provided by **licensed** Air Traffic Controllers.

18. A control area established in the form of a corridor equipped with **radio navigational** aids is known as runway.

19. The direction in which the longitudinal axis of an aircraft is pointed usually expressed in degrees from North (magnetic) is known as **Heading**.

20. **Height.** The vertical distance of a level, a point or an object considered as appoint, measured from a specified datum.

21. The bearing strength of a pavement or runway is defined by a number is known as **Load Classification Number**.

22. **Prohibited Area** is airspace of defined dimensions, above the land areas of territorial waters of a State, within which the flight of aircraft is prohibited.

23. **Restricted Area** is an airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is restricted

24. Aerodrome pressure when set on the altimeter on the ground, the Altimeter should read **zero**.

25. The ability, as determined by atmospheric conditions and expressed in units of distance, to see and identify prominent lighted objects by night is known as **visibility**.

26. Aerodrome pressure corrected for temperature and adjusted to Mean Sea Level, using the **ICAO** formula.

27. **Altitude** is the vertical distance of a level, a point or object considered as a point measured from mean sea level (MSL).

28. **Ceiling** is the height above ground or water of the base of the lowest layer of cloud below 6,000 meters (20,000') covering more than half the sky.

29. An airspace of defined dimensions within which activities dangerous to the flight on ground manoeuvring of ac may exist at specified times is known as **Danger Area.**.

30. **Distress Message** is an emergency message to be used when an aircraft is threatened by serious or imminent danger and the crew is in need of immediate assistance.

31. The vertical position of a point or a level, above, on or affixed to the surface of the earth, measured from mean sea level is known as **Elevation**.

32. **Estimated Time of Arrival (ETA)** is for IFR flights, the time at which it is estimated that the ac will arrive over a designed point,

33. **Flight Plan.** Specified information provided to Air Traffic Service Units, relative to the intended flight or portion of a flight of an ac is known as **Flight Plan**.

RULES OF THE AIR

1. When the prevailing visibility, distance from cloud, and ceiling are equal to or better than the specified minimum is known as **Visual Meteorological Conditions.**

2. In Visual Meteorological Conditions the flight criteria for Visibility is **5 nm / 8 km**.

3. In Visual Meteorological Conditions the flight criteria for Distance from cloud is **200 yards / 1.5 km horizontally**.

4. In Visual Meteorological Conditions the flight criteria for Distance from cloud is **1000 feet / 200 meters vertically**.

5. Except when necessary for take-off or landing, or except by permission from the appropriate authority, a VFR flight shall not be flown out of **Minimum Heights.**

6. VFR flights shall not take off or land at an aerodrome when the ground visibility and or the cloud ceiling are less than that specified for **VMC** in the laid down orders.

7. Specially authorised flight can be permitted even in weather conditions below VMC, subject to obtaining ATC clearance. Such flights are known as **special VFR flights**.

8. There is also **Restrictions** in VFR Flights except those operated in the immediate vicinity of the aerodrome, shall not be operated at night.

9. There is also **Restrictions** in VFR Flights except those operated in the immediate vicinity of the aerodrome, shall not be operated above flight level 200.

10. A VFR flight when electing to **change to IFR** shall communicate the necessary changes to be effected to its current flight plan.

11. A VFR flight when electing to **change to IFR** shall submit a flight plan to the appropriate ATS unit and obtain clearance prior when in controlled airspace.

12. A **pilot** may be allowed to fly in accordance with the instrument flight rules in visual meteorological conditions.

13. An aircraft shall be equipped with suitable **instruments** and with **navigational** aids appropriate to the route to be flown.

14. An IFR flight can change to VFR flight shall notify that the **IFR flight is cancelled** and communicate the change to be made to its current flight plan.

15. When two aircrafts are on the paths which cross, the aircraft which has the other on its right is to give way is known as **Converging**.

16. When two aircrafts are **approaching head on** each is to alter heading to the right.

17. An aircraft **overtaking** another aircraft is to avoid the overtaking aircraft by altering heading to the right, and is to keep clear until all risk of collision is past.

18. Aircraft in the final stage of **landing** have the right of way over aircraft in the air and on the ground.

19. In **Emergency landing** the aircraft having the right of way should normally maintain its heading and speed.

20. The **captain** of an aircraft flying within the Indian is to comply with rules of the air, standard flying orders, and air traffic control regulations,

21. The captain of an aircraft using **civil aerodrome** is to comply with the civil procedures in force at that aerodrome.

CIRCUIT PROCEDURES

1. A pattern for traffic movement has been established for use at all aerodromes is called a **traffic circuit**.

2. The **upwind side** is the area on the opposite side of the landing runway from the downwind leg.

3. The **circuit joining crosswind** is a corridor, lying within the airspace between the centre of the landing runway and its upwind end, linking the upwind side and the downwind leg.

4. The **downwind leg** is a flight path, opposite to the direction of landing, which is parallel to and at a sufficient distance from the landing runway to permit a standard rate –one turn to the base leg.

6. The **base leg** is a flight path at right angles to the direction of landing and sufficiently downwind of the approach end of the landing run-way to permit at least a ¼ mile final approach leg after completion of a standard rate –one turn to final approach.

7. The **final approach leg** is a flight path in the direction lf landing, commencing at least ¼ mile from the runway threshold, wherein an airplane is in line with the landing runway and descending towards the runway threshold.

10. The **tower controller** will advise the runway in use, wind direction and speed, altimeter setting and any other pertinent information.

11. **"Cleared to the Circuit"** authorizes you to join the circuit on the downwind leg at circuit height.

12. An aircraft pilot must have **landing clearance** prior to landing by the controller.

13. Even after landing clearance is given, **the tower** may advise you to pull off and go around again if the situation on the runway becomes unsafe for landing.

14. As pilot, feel that there is a **hazard** to the safe landing of your flight he should advise **ATC** of his intentions and go around again.

15. After landing you should **clear** the runway without delay by continuing forward to the nearest available taxi strip or turn off point.

16. At larger controlled airports runway and weather information is broadcast on the **automatic terminal information service** .

17. Always check the **VTA** chart if applicable for special procedures that are in force at any airport at which you intend to land.

15. If you are intending to take off from a controlled airport, you must contact **ground control** for taxi instructions before starting up towards the active runway.

ATC RT PROCEDURE

1. Services provided for the safe and efficient conduct of flight are termed as **air traffic services**.

2. The main Object of Air Traffic Service is to **prevent** collision between aircraft.

3. The main Object of Air Traffic Service is to **expedite and maintain** an orderly flow of traffic.

4. Air Traffic Advisory Service comes under **ATS**.

5. Alerting Service comes under **ATS**.

6. **Air Traffic Advisory Service** is a service provided within advisory airspace to ensure separation, in so far as possible, between aircraft which are operating in IFR flight plans.

7. **Alerting Service** is provided to notify appropriate organisations regarding aircraft in need of search and rescue and assist such organisations when required.

8. **Area Control Centre** is a unit established to provide air traffic control service to controlled flights, in control areas, under its jurisdiction.

9. **Approach Control Office** is a unit established to provide air traffic control service to controlled flights arriving at or departing from, one or more aerodromes.

10. **Aerodrome Control Tower** is a unit established to provide air traffic control service to aerodrome traffic.

11. **Flight Information Centre** is a unit established to provide flight information service.

12. **Control Area** is an airspace of defined dimensions extending upwards from specified limit above the earth, within which control service is provided to controlled flights.

13. **Control Zone** is an airspace of defined dimensions extending upwards from the surface of the earth to a specified upper limit, within which Air Traffic Control Service is provided to controlled flights.

14. **Aerodrome Traffic Zone** is an airspace of defined dimensions established around an aerodrome for the protection of aerodrome traffic.

15. A designated area within a flight information region where air traffic advisory service is available **Advisory area.**

16. **Aerodrome Control Tower** is responsible for Control of aircraft flying in the vicinity of the aerodrome in VMC.

17. **Approach Control** provides the provision of air traffic control service for the parts of the controlled flights associated with arrivals or departures.

18. The organisation responsible to provide ATC service to controlled flights in control area is known as **Area Control Centre**.

19. Area Control Service provided to controlled flight in their en-route phase is termed as **airways control**.

20. When different airways approach in the vicinity of one more major aerodromes, the resultant terminal airspace is protected and control area is established. Such controlled areas at the confluence of airways are called **"Terminal Manoeuvring Areas" (TMA)**.

21. An ATCC transferring control of an aircraft should pass an estimate for the arrival of such aircraft at the transfer point to the next ATCC / ACC **30 minutes ahead** of aircraft's actual passage.

22. If 30 minutes prior intimation cannot be given an 'approach acceptance' request shall be made to the ATCC / ACC **accepting/taking** over control of aircraft.

23. Instruction regarding the transfer of communication will normally be given to aircraft 5 minutes before the **ETA** over transfer point.

24. In Radio Communication Standard Phraseologies alphabet A is identified as **Alpha**.

25. In Radio Communication Standard Phraseologies alphabet B is identified as **Bravo**.

26. In Radio Communication Standard Phraseologies alphabet C is identified as **Charlie**.

27. In Radio Communication Standard Phraseologies alphabet D is identified as **Delta**.

28. In Radio Communication Standard Phraseologies alphabet E is identified as **Echo**.

29. In Radio Communication Standard Phraseologies alphabet F is identified as **Foxtrot**.

30. In Radio Communication Standard Phraseologies alphabet G is identified as **Golf**.

31. In Radio Communication Standard Phraseologies alphabet H is identified as **Hotel**.

32. In Radio Communication Standard Phraseologies alphabet I is identified as **India**.

33. In Radio Communication Standard Phraseologies alphabet J is identified as **Juliet**.

34. In Radio Communication Standard Phraseologies alphabet K is identified as **Kilo**.

35. In Radio Communication Standard Phraseologies alphabet L is identified as **Lima**.

36. In Radio Communication Standard Phraseologies alphabet M is identified as **Mike**.

37. In Radio Communication Standard Phraseologies alphabet N is identified as **November**.

38. In Radio Communication Standard Phraseologies alphabet O is identified as **Oscar**.

39. In Radio Communication Standard Phraseologies alphabet P is identified as **Papa**.

40. In Radio Communication Standard Phraseologies alphabet Q is identified as **Quebec**.

41. In Radio Communication Standard Phraseologies alphabet R is identified as **Romeo**.

42. In Radio Communication Standard Phraseologies alphabet S is identified as **Sierra**.

43. In Radio Communication Standard Phraseologies alphabet T is identified as **Tango**.

44. In Radio Communication Standard Phraseologies alphabet U is identified as **Uniform**.

45. In Radio Communication Standard Phraseologies alphabet V is identified as **Victor**.

46. In Radio Communication Standard Phraseologies alphabet W is identified as Whiskey.

47. In Radio Communication Standard Phraseologies alphabet X is identified as **X-ray**.

48. In Radio Communication Standard Phraseologies alphabet Y is identified as **Yankee**.

49. In Radio Communication Standard Phraseologies alphabet Z is identified as **Zulu**.

AVIATION MEDICINE

1. **Hypoxia** can be defined as a lack of sufficient oxygen in the body cells or tissues.

2. The progress from euphoria to reduced vision, confusions, inability to concentrate, impaired judgment, and slowed reflexes to eventual loss of consciousness is known as **effects of Hypoxia**.

3. The first evidence of hypoxia occurs at 5000 feet in the form of **diminished night vision**.

4. At **10000** feet a pilot should expect **deterioration** in concentration, problem solving and efficiency.

5. At **14000** feet **Cyanosis (**blue discolouring of the finger nails) is first noticed.

6. At **16000** feet, a pilot becomes **disoriented** is belligerent euphoric and completely lacking in rational judgment. Control of the airplane can be easily lost.

7. At **18000** feet, primary shocks set in and the individual loses consciousness within minutes.

8. In **Hyperventilation** the most common symptoms are dizziness, tingling of the toes and fingers, hot and cold sensations nausea and sleepiness.

9. The **remedy** of hyperventilation is a conscious effort to slow down the rate of breathing and to hold the breath intermittently to allow the carbon dioxide to build up to a normal level.

10. The **inability** to pass trapped gas may cause abdominal pain, toothache or pain in ears or sinuses cavities.

11. The conditions caused by changing barometric pressure are known as **Dysbarisms.**

12. Any physical damage that results is called a **Barotraumas.**

13. If **air is trapped** in the middle ear, the eardrum stretches to absorb the higher pressure thus result is pain and some time temporary deafness in during ascent and descent.

14. **Fatigue** is one of the most common psychological problems for air crew members and will adversely affect individuals who are other wise in good health.

15. **Fatigue** is caused by many things: lack of sleep, poor nutrition, stretch, prolonged and repeated flights, air craft noise, eye strain, vibration, wide vibrations in temperature and humidity, heavy work load and uncomfortable working conditions, boredom, monotony, night flights, frustration from work and family.

SURVIVAL

1. The instinct to **survive** is a law of nature.

2. With proper knowledge, good training and reasonable equipment, it will be possible to **achieve** survive objective.

3. **Will** to survive is important aid to survive.

4. **Courage** is also a factor promoting chances to Survive.

5. **Panic** is a factor reducing chances of Survival.

6. **Signalling** can also be done by smoke, fire , pyro-technique or heliograph.

7. Prior to entering the jungle, whether by bailing out or by crash landing, a mental note of the **topography** should be made.

8. **First Aid** is important and especially in tropical countries where wounds become septic very quickly.

9. The technique for **trekking** is to conserve energy and therefore to proceed slowly and deliberately follow streams.

10. Avoid **swampy** ground.

11. When camping chooses a site close to sources of water, food and solid ground, taking whatever natural protection is available from the weather.

12. All water should be purified, using the water **sterilizing tables** provided or boiling for at least three minutes.

13. The food eaten by **monkey** can be considered as generally fit for human consumption.

14. In **Sun and Heat** keep yourself under shade and consume enough cold water.

15. Large quantities of water should be taken to replace **lost body fluids**.

16. **Leaches** should be removed either by touching with salt or tobacco or burning with the lighted end of a cigarette.

17. In case of snake bite tie a **tourniquet** above the wound.

18. **Bamboo** thrown on a fire will burn with a loud noise resemble gun shots sufficient to drive away wild animals.

20. **In Cold Water** get ashore at once or try to minimize exposure to cold water. Huddle together and exercise regularly.

21. **In Warm Ocean** rig sun shade Keep skin covered.

22. Use **airsickness or seasickness tablets** as early as possible and repeat at every 6-8 hrs.

SA-1 (02marks)

AIRMANSHIP

1. What is airmanship?
Ans. Airmanship is a study of rules and regulations which must be followed both on the ground and in air to ensure safety and proper discipline in flying.

2. What is an aerodrome?
Ans. A defined area on land or water including any buildings, installations and equipment intended to be used either wholly or in part for the arrival, departure and movement of ac.

3. Define airfield?
Ans. an area of land used for takeoff and landing of aircraft and excludes buildings and installations.

4. Define airport?
Ans. The word airport is mainly used for civil flying establishments which handle international air traffic and, therefore, have a custom house, other travel amenities – port facilities in fact.

5. Define Aircraft Classification Number?
Ans. The aircraft classification number is a number expressing the relative effect of an ac load on a pavement for specified sub-grade strength.

6. Define Air Defence Identification Zone?
Ans Airspace of defined dimensions within which the ready identification, location and control of ac is required is known as air defence identification zone.

7. What is air route?
Ans. The navigable airspace between two points, identified to the extent necessary for the application of flight rules is known as air route.

8. Define Air Traffic Control Clearance?
Ans. Authorisation for an aircraft to proceed under conditions specified by an air traffic control unit is known as air traffic control clearance.

9. What is heading?
Ans. Heading is known as the direction in which the longitudinal axis of an aircraft is pointed usually expressed in degrees from North (magnetic).

10. Define prohibited area?
Ans. An airspace of defined dimensions, above the land areas of territorial waters of a State, within which the flight of aircraft is prohibited is known as prohibited area.

RULES OF THE AIR

1. What is Special VFR Flights?

Ans Specially authorised flights can be permitted even in weather conditions below VMC, subject to obtaining ATC clearance. Such flights are known as special VFR flights.

2. Give any one reason for change from VFR to IFR flight?

Ans. A VFR flight when electing to change to IFR shall:

(a) Communicate the necessary changes to be effected to its current flight plan or;

(b) Submit a flight plan to the appropriate ATS unit and obtain clearance prior to changing over the IFR flight when in controlled airspace.

3. What is converging?

Ans. When two aircrafts are on the paths which cross, the aircraft which has the other on its right is to give way is known as converging.

4. What is landing?

Ans. Aircraft in the final stage of landing have the right of way over aircraft in the air and on the ground. Sub para (a) does not apply to this rule.

CIRCUIT PROCEDURES

1. What is traffic circuit?

Ans. A pattern for traffic movement has been established for use at all aerodromes. It is called a **traffic circuit.**

2. What is upwind side?

Ans. The **upwind side** is the area on the opposite side of the landing runway from the downwind leg. Approach should be made into this area at or above circuit height.

3. What is circuit joining crosswind?

Ans. The **circuit joining crosswind** is a corridor, lying within the airspace between the centre of the landing runway and its upwind end, linking the upwind side and the downwind leg.

4. What is downwind leg?
Ans. The **downwind leg** is a flight path, opposite to the direction of landing, which is parallel to and at a sufficient distance from the landing runway to permit a standard rate –one turn to the base leg.

5. What is base leg?
Ans. The **base leg** is a flight path at right angles to the direction of landing and sufficiently downwind of the approach end of the landing run-way topermit at least a ¼ mile final approach leg after completion of a standard rate –one turn to final approach.

6. What is final approach leg?
Ans. The **final approach leg** is a flight path in the direction lf landing, commencing at least ¼ mile from the runway threshold, wherein an airplane is in line with the landing runway and descending towards the runway threshold.

7. After landing what pilot has to do?
Ans. After landing you should clear the runway without delay by continuing forward to the nearest available taxi strip or turn off point.

ATC RT PROCEDURE

1. Being an air wing cadet what they must know?
Ans. As a Air Wing NCC cadet it is must to know about ATC &RT procedure prior to start flying.

2. What is air traffic services?
Ans. Services provided for the safe and efficient conduct of flight are termed as air traffic services.

3. What is Area Control Service?
Ans. ATS service for controlled flights in control areas is known as area control service.

4. What is aerodrome control service?
Ans. ATC service for aerodrome traffic is known as aerodrome control service.

5. Define Alerting service?
Ans. To notify appropriate organisations regarding aircraft in need of search and rescue and assist such organisations when required is known as alerting service.

6. What is advisory route?
Ans. A route within a flight information region along which air traffic advisory service is available.

7. What is approach control?
Ans. It is the provision of air traffic control service for the parts of the controlled flights associated with arrivals or departures.

8. What is TMA?
Ans. When different airways approach in the vicinity of one more major aerodromes, the resultant terminal airspace is protected and control area is established. Such controlled areas at the confluence of airways are called "Terminal Manoeuvring Areas"

AVIATION MEDICINE

1. What is the aim of aviation medicine?
Ans. To teach the Cadets about aeromedical aspects in aviation, lack of oxygen effects/hypoxia, fatigue and decompression sickness.

2. What is hypoxia?
Ans. Hypoxia can be defined as a lack of sufficient oxygen in the body cells or tissues.

3. At 14000 feet discoloring of the finger nails is known as?
Ans. At 14000 feet discoloring of the finger nails is known as cyanosis.

4. What is the remedy of hyperventilation?
Ans. The remedy of hyperventilation is a conscious effort to slow down the rate of breathing and to hold the breath intermittently to allow the carbon dioxide to build up to a normal level.

5. What is valsava technique?
Ans. Valsava technique is to close the mouth, hold the nose and blow gently.

6. How acute fatigue can be treated easily?
Ans. Acute fatigue is easily treated by a meal and a good sleep.

SURVIVAL

1. Write the two factor of survival?
Ans. Survival mainly depends on two factors
(a) The ingenuity of the individual.
(b) Resources available.

2. What ae the important aids to survival?
Ans The important aids to survival are
(a) Will to survive.
(b) Prior knowledge of terrain.
(c) Preparedness in use of available aids and improvisation.
(d) Available equipment, food, water and confidence in available aids.

3. Write factors reducing chances of survival?
Ans. Mainly there are two factors reducing chances of survival
(a) Psychological
(b) Physiological

4. Write various stages in survival?
Ans. various stages in survival
(a) Pre-Flight
(b) In Flight
(c) Post Flight
(d) Subsequent Action

5. Write type of survival?
Ans. There are two types of survival
(a) Land survival
(b) Sea survival

6. While camping which site you choose?
Ans. While camping chooses a site close to sources of water, food and solid ground, taking whatever natural protection is available from the weather.

7. Which type of water do not require purification?

Ans. There are some sources of water which do not require purification
(a) Rain
(b) Jungle vines- the lower loop of any vine will provide water.

8. Write types of survival kits?
Ans. Survival packs are basically two types
(i)Fighter Type
(ii) Transport / Helicopter type.

9. What are the contents in a survival pack?
Ans. The contents of most of the survival packs are, a first aid kit, water, food, signalling& location aids, some safety equipment, extra clothing like socks, antiglare goggles and a booklet on survival.

LA-1 (03marks)
AIRMANSHIP

1. Write some points on importance of airmanship?
Ans. Airmanship helps to inculcate the sense of discipline amongst pilots and other crew members. It helps the pilot to know the standard procedures laid down for the airfield on which he is operating. It helps the pilot to know procedure to be followed in emergency situation.

2. What is aerodrome reference point
Ans. It is a designated geographical location of an aerodrome, normally taken as the geometrical centre of the runways or runway in the case of a single runway aerodrome. The ARP is defined in degrees, minutes and seconds of latitude and longitude.

3. What is air report?
Ans. It is a report passed during the course of a flight in conformity with requirements for position, operational, or meteorological reporting in the AIREP or POMAR forms.

4. What is duties f ATC centre?
Ans. An ATC centre is established to provide
(a) Air traffic control within a control area (where established).
(b) Flight information service within a flight information region.
(c) Alerting service for search and rescue within its flight information region.

5. What is holding point?

Ans. A point specifically located, identified by visual or other means in the vicinity of which the position of an aircraft in flight is maintained in accordance with air traffic control instructions.

6. What is transition layer?
Ans. The airspace between the transition altitude and the transition level. The depth of the layer will normally be insignificant, and will in any case never exceed 500 ft is known as transition layer.

7. Write short note on visibility?
Ans. The ability, as determined by atmospheric conditions and expressed in units of distance, to see and identify prominent lighted objects by night.

8. Write short note on QNH?
Ans. Aerodrome pressure corrected for temperature and adjusted to Mean Sea Level, using the ICAO formula. When set on the altimeter on the ground, the altimeter should read aerodrome elevation.

9. What do you understand by alternate aerodrome?
Ans. An aerodrome specified in the flight plan to which a flight may proceed when it becomes inadvisable to land at the aerodrome of intended landing.

RULES OF THE AIR

1. Write the criteria of visual meteorological conditions?
Ans. The criteria of visual meteorological conditions in flight are:
(a) Visibility: 5 nm / 8 km.
(b) Distance from cloud: 200 yards / 1.5 km horizontally and 1000 feet / 200 meters vertically.

2. Give some point when VFR flight shall not be oprated?
Ans. VFR flight shall not be operated:
(a) Between sunset and sunrise.
(b) Above FL 200 (above flight level 150 in South East Asia).
(c) At transonic and supersonic speeds.

3. Write short note on rules governing take-off and landing?

Ans. VFR flights shall not take off or land at an aerodrome or enter the aerodrome traffic zone/pattern when the ground visibility and or the cloud ceiling are less than that specified for VMC in the laid down orders.

4. Write restriction on VFR flights?

Ans. VFR Flights except those operated in the immediate vicinity of the aerodrome, shall not be operated

(a) At night.
(b) Above flight level 200 (above flight level 150 in South East Asia)
(c) More than 100 nm seawards from the shoreline in controlled air space.

5. Define communication in IFR flight?

Ans. An IFR flight operating within specified areas or along specified routes outside controlled airspace shall maintain a listening out watch on the appropriate radio frequency and establish two way communication as necessary, with the ATS units providing flight information service / advisory service.

6. Define approaching to land?

Ans. The aircraft at the lower altitude on the approach has the right of way; normally, however, as a matter of courtesy, captains of light maneuverable aircraft give way for the heavier types in which the overshoot procedure is involved.

7. When flying in the circuit, what a pilot should know ?

Ans. When flying in the circuit, a pilot should know is to

(i) Keep a sharp look out for other aircraft in the vicinity.
(ii) Conform with or avoid the traffic pattern.
(iii) Maintain a continuous listening watch on the aerodrome R/T frequencies and keep a sharp look out for any visual signals which may be displayed.
(iv) Obtain, by R/T or visual means, authorization for any movements.

CIRCUIT PROCEDURES

1. Define downwind leg?

Ans. The downwind leg is a flight path, opposite to the direction of landing, which is parallel to and at a sufficient distance from the landing runway to permit a standard rate –one turn to the base leg.

2. What is base leg?

Ans. The base leg is a flight path at right angles to the direction of landing and sufficiently downwind of the approach end of the landing run-way to permit at least a ¼ mile final approach leg after completion of a standard rate –one turn to final approach.

3. What is final approach leg?

Ans. The final approach leg is a flight path in the direction lf landing, commencing at least ¼ mile from the runway threshold, wherein an airplane is in line with the landing runway and descending towards the runway threshold.

RT PROCEDURE

1. What is the aim of RT procedure?

Ans. To acquaint the cadets about the ATS definitions, functions, procedure and standard phraseologies used while communication between aircraft and the ground staff.

2. Write various services provided by ATS?

Ans. The ATS includes the following services
(a) Air Traffic Control Services.
(b) Flight Information Service.
(c) Air Traffic Advisory Service.
(d) Alerting Service.

3. What is the purpose of air traffic control service?

Ans. The purpose of Air traffic control service is to
(a) Preventing collisions between aircraft.
(b) Prevent collisions on the manoeuvring area between aircraft and obstructions.
(c) Expediting and maintaining an orderly flow of air traffic.

4. Write jurisdiction of various ATS units?

Ans. Jurisdiction of various ATS units are
(a) Control Area
(b) Control Zone
(c) Aerodrome Traffic Zone
(d) Flight Information Region
(e) Advisory Airspace.

5. Write the responsibility of aerodrome control tower?

Ans. Aerodrome Control Tower is responsible for

(a) Control of all traffic (aircraft vehicular and pedestrian) on the manoeuvring area of the aerodrome.

(b) Control of aircraft flying in the vicinity of the aerodrome in VMC.

AVIATION MEDICINE

1. Write effect of Hypoxia?

Ans. The effects of Hypoxia progress from euphoria (feeling of well-being) to reduced vision, confusions, inability to concentrate, impaired judgment, and slowed reflexes to eventual loss of consciousness.

2. Write effects on vision at 5000 ft?

Ans. The effect hypoxia occurs at 5000feet in the form of diminished night vision. Instruments and maps are miss read, dimly lit ground features are misinterpreted.

3. What is the effect on pilot body at 16000 feet height?

Ans. At 16000 feet, a pilot becomes disoriented, is belligerent euphoric and completely lacking in rational judgment. Control of the airplane can be easily lost.

4. What is the effect on individual body at 18000 feet and above height?

Ans. At 18000 feet, primary shocks set in and the individual loses consciousness within minutes. At higher altitudes, death may result after a prolonged period.

5. Why Hyperventilation occurs?

Ans. Due to the natural in balance of oxygen and carbon dioxide in the system hyperventilation occurs,

SURVIVAL

1. What is the law of nature for survival and its factors?

Ans. The instinct to survive is a law of nature and when forced with a hostile environment, survival mainly depends on two factors

(a) The ingenuity of the individual.

(b) Resources available.

2. Write about the important aids to survival?

Ans. The important aids to survival are
(a) Will to survive.
(b) Prior knowledge of terrain.
(c) Preparedness in use of available aids and improvisation.
(d) Available equipment, food, water and confidence in available aids.

3. Write about pattern of survival?
Ans. The pattern of survival depends upon
(a) Pre Flight plan.
(b) Protection from animals, enemies, environment.
(c) Location of aids.
(d) Water, food and health hazards.

4. Write about pre flight stage in survival?
Ans. In pre flight stage in survival proper knowledge and training about terrain and equipment, good physical fitness and reasonability of equipments provided, are all extremely important preparations for survival. Practical survival training earned during survival exercises, which are conducted periodically is very helpful.

5. Which type of food you will eat in land survival?
Ans. This is seldom a problem in the labd. It is important to know types of edible fruits available in the particular area in which you operate. The food eaten by monkey can be considered as generally fit for human consumption. The chief sources of food are normally plant, fish and birds. Animal are potential source of food but are not always easy o catch and kill.

6. What you will do after snake bite?
Ans. These seldom attack man unless provoked. In case of snake bite do not run about. Tie a tourniquet above the wound. Loosen the tourniquet every 10 – 15 minutes for 2- 3 minutes. Squeeze out the blood from the wound and wash with water.

7. What type care should be taken for feet during land survival?
Ans. During land survival wash socks each day, wash your feet thoroughly, keep your foot wear dry by keeping hear the fire at night.

8. Write types of survival kits?
Ans. The survival packs are basically two types- Fighter Type and Transport / Helicopter type.

9. Write contents of survival kits?
Ans. The contents of most of the survival packs are, a first aid kit, water, food, signalling& location aids, some safety equipment, extra clothing like socks, antiglare goggles and a booklet on survival.

LA-2 (04marks)
AIRMANSHIP

1. Describe airmanship in brief?

Ans. Airmanship is a study of rules and regulations which must be followed both on the ground and in air to ensure safety and proper discipline in flying. It, thus, includes all air traffic control procedures and other actions laid down to deal with any type of aircraft emergencies, and other contingencies.

2. Describe aerodrome and airfield?

Ans. **Aerodrome:** A defined area on land or water including any buildings, installations and equipment intended to be used either wholly or in part for the arrival, departure and movement of ac.

Airfield: The airfield refers to an area of land used for takeoff and landing of aircraft and excludes buildings and installations.

3. Describe airfield and airport?

Ans. **Airfield:** The airfield refers to an area of land used for takeoff and landing of aircraft and excludes buildings and installations.

Airport: The word airport is mainly used for civil flying establishments which handle international air traffic and, therefore, have a custom house, other travel amenities – port facilities in fact.

4. Define aerodrome traffic zone?

Ans. **Aerodrome Traffic Zone.** The airspace extending from an aerodrome to a height of 2000 ft above the level of the aerodrome and within a distance of 1 ½ nm of its boundaries; except any part of that airspace which is within the aerodrome traffic zone of another aerodrome which is notified as being the controlling aerodrome is called the Aerodrome Traffic Zone.

5. Define airway and heading?

Ans. **Airway.** A control area or portion thereof established in the form of a corridor equipped with radio navigational aids.

Heading. The direction in which the longitudinal axis of an aircraft is pointed usually expressed in degrees from North (magnetic).

6. Define height and heading?

Ans. **Height.** The vertical distance of a level, a point or an object considered as appoint, measured from a specified datum.

Heading. The direction in which the longitudinal axis of an aircraft is pointed usually expressed in degrees from North (magnetic).

7. Define height and holding point?

Ans. **Height.** The vertical distance of a level, a point or an object considered as appoint, measured from a specified datum.

Holding Point. A point specifically located, identified by visual or other means in the vicinity of which the position of an aircraft in flight is maintained in accordance with air traffic control instructions.

8. Define prohibited area and restricted area?

Ans. **Prohibited Area.** Airspace of defined dimensions, above the land areas of territorial waters of a State, within which the flight of aircraft is prohibited.

Restricted Area: An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is restricted in accordance with specified conditions.

9. Define altitude and ceiling?

Ans. **Altitude.** The vertical distance of a level, a point or object considered as a point measured from mean sea level (MSL).

Ceiling. The height above ground or water of the base of the lowest layer of cloud below 6,000 meters (20,000') covering more than half the sky.

10. Define estimated time of arrival?

Ans. **Estimated Time of Arrival (ETA).** For IFR flights, the time at which it is estimated that the ac will arrive over a designed point, defined by reference to navigation aids, from which it is intended that an instrument approach procedure will be commenced, or, if no navigational aid is associated with the aerodrome, the time at which the ac will arrive overhead. For VFR flights, it is the time at which it is estimated that the ac will arrive over the aerodrome.

RULES OF THE AIR

1. Describe minimum heights in rules of the air?

Ans. **Minimum Heights:** Except when necessary for take-off or landing, or except by permission from the appropriate authority, a VFR flight shall not be flown:

(a) Over the congested area of cities, towns or settlements or over anopen air assembly or persons at height less than 1000 feet (300 meters) above the highest obstacle within a radius of 2000 ft (600 meters) from the aircraft.

(b) Elsewhere than as specified above, at a height less than 500 feet(150meters) above the ground or water.

2. Condition to change from VFR to IFR flight?

Ans. A VFR flight when electing to change to IFR shall

(a) Communicate the necessary changes to be effected to its current flight plan or;

(b) Submit a flight plan to the appropriate ATS unit and obtain clearance prior to changing over the IFR flight when in controlled airspace.

3. Condition to change from IFR to VFR flight?

Ans. **Change from IFR Flight to VFR Flight.** An IFR flight electing to change to Visual Flight Rules, shall notify the appropriate unit, specifically, that the IFR flight is cancelled and communicate the change to be made to its current flight plan.

4. Describe communication?

Ans. **Communication.** An IFR flight operating within specified areas or along specified routes outside controlled airspace shall maintain a listening out watch on the appropriate radio frequency and establish two way communication as necessary, with the ATS units providing flight information service / advisory service.

5. Define overtaking?

Ans. **Overtaking**:An aircraft overtaking another aircraft is to avoid the overtaking aircraft by altering heading to the right, and is to keep clear until all risk of collision is past. Sub para (a) does not apply to this rule. An aircraft is overtaking another aircraft, when it is approaching from the rear at an angle of less than 70 degree to the fore and aft axis of the overtaken aircraft.

6. Define emergency landing?

Ans. **Emergency landing**: An aircraft seen, or known to be carrying out an emergency landing has the right of way over all others. Every aircraft obliged by the above rules to keep out of the way of another, is, if possible, to avoid passing over a under the other or crossing ahead of it. The aircraft having the right of way should normally maintain its heading and speed.

CIRCUIT PROCEDURES

1. Define upwind side and downwind leg?

Ans. Upwind side is the area on the opposite side of the landing runway from the downwind leg. Approach should be made into this area at or above circuit height.

Downwind leg is a flight path, opposite to the direction of landing, which is parallel to and at a sufficient distance from the landing runway to permit a standard rate –one turn to the base leg.

2. Define base leg and downwind leg?

Ans. The base leg is a flight path at right angles to the direction of landing and sufficiently downwind of the approach end of the landing run-way to permit at least a ¼ mile final approach leg after completion of a standard rate –one turn to final approach.

Downwind leg is a flight path, opposite to the direction of landing, which is parallel to and at a sufficient distance from the landing runway to permit a standard rate –one turn to the base leg.

3. Write short notes on AITS?

Ans. At some of the larger controlled airports, more facilities than just the tower are available. Runway and weather information is broadcast on the automatic terminal information service (ATIS). Always listen to the ATIS before contacting the tower and then advice the tower that you have the ATIS information.

ATC RT PROCEDURE

1. What are the different services of ATS?

Ans. The ATS include the following:

(a) Air Traffic Control Services
(i) Area Control Service
(ii) Approach Control Service
(iii) Aerodrome Control Service.
(b) Flight Information Service.
(c) Air Traffic Advisory Service.
(d) Alerting Service.

2. Write short note on air traffic advisory and alerting services?

Ans. **Air Traffic Advisory Service.** A service provided within advisory airspace to ensure separation, in so far as possible, between aircraft which are operating in IFR flight plans.

Alerting Service. Provided to notify appropriate organisations regarding aircraft in need of search and rescue and assist such organisations when required.

3. Write various parts of air traffic service unit?

Ans. Various parts of air traffic service unit are

(a) Area Control Centre
(b) Approach Control Office
(c) Aerodrome Control Tower
(d) Flight Information Centre

AVIATION MEDICINE

1. Write short note for effect on vision at 5000 feet?

Ans. The retina of the eye is actually an outcropping of the brain and as such is more dependent on an adequate supply of oxygen than any other part of the body. For this reason, the first evidence of hypoxia occurs at 5000feet in the form of diminished night vision. Instruments and maps are miss read, dimly lit ground features are misinterpreted.

2. What happens at 10000 feet altitude?

Ans. At 10000 feet, there is a definite but undetectable Hypoxia. This altitude is the highest level at which a pilot should consider himself efficient in judgment and ability. However, conditions operation even at this altitudes for periods of more than , say 4 hours can produce fatigue because of the reduced oxygen supply and a pilot should expect deterioration in concentration, problem solving and efficiency.

3. Write what happens at 14000 feet altitude?

Ans. At 14000 feet, lassitude and indifference are appreciable. There is dimming of vision, tremor of hands, clouding of thought and memory and errors in judgment. Cyanosis (blue discoloring of the finger nails) is first noticed.

4. After prolonged period what can occur at 18000 feet?

Ans. At 18000 feet, primary shocks set in and the individual loses consciousness within minutes.At higher altitudes, death may result after a prolonged period.

5. Common symptoms of hyperventilation?

Ans. The most common symptoms are dizziness, tingling of the toes and fingers, hot and cold sensations nausea and sleepiness. Unconsciousness may result is the breathing rate is not regulated.

6. Remedy of hyperventilation?

Ans. The remedy of hyperventilation is a conscious effort to slow down the rate of breathing and to hold the breath intermittently to allow the carbon dioxide to build up to a normal level. Some time, the proper balance of carbon dioxide can be more quickly restored by breathing into a paper bag, that is, by re-breathing the expelled carbon dioxide.

7. Why gases are trapped in our body, what may other symptoms may occur?

Ans. Because of the change in barometric pressure during ascent and the descent, gases trapped in certain body cavities expand or contract the inability to pass these gas may cause abdominal pain, toothache or pain in ears or sinuses cavities. In some cases, the pain may be so severe as to lead to incapacitation.

8. What happens when air is trapped in middle ear?

Ans If air is trapped in the middle ear, the eardrum stretches to absorb the higher pressure. The result is pain and some time temporary deafness. Eardrum rupture is even possible.

9. Write causes of fatigue?

Ans. Fatigue is caused by many things: lack of sleep, poor nutrition, stretch, prolonged and repeated flights, air craft noise, eye strain, vibration, wide vibrations in temperature and humidity, heavy work load and uncomfortable working conditions, boredom, monotony, night flights, frustration from work and family.

SURVIVAL

1. Factors promoting chances of survival?

Ans. Factors promoting chances of survival are

(a) Common sense.
(b) Determination and will to survive.
(c) Courage.
(d) Training
(e) Equipment.

(f) Luck.

2. Factors reducing chances of survival?

Ans. Factors reducing chances of survival are

(a) Psychological: Panic, fear, loneliness, boredom fear of unknown, darkness and jungle animals.

(b) Physiological: Heat / Cold, injuries, illness, shortage of food and water.

3. Write pre-flight stage in survival?

Ans. Pre-Flight: Proper knowledge and training about terrain and equipment, good physical fitness and reasonability of equipments provided, are all extremely important preparations for survival. Practical survival training earned during survival exercises, which are conducted periodically is very helpful.

4. Write subsequent action in survival?

Ans. **Subsequent Action.** Signalling so as to indicate your own location and help rescue team in locating the survivors. This is done by using mini flare or radio sets provided with the survival pack. Signalling can also be done by smoke, fire , pyro-technique or heliograph. Do everything and anything to disturb the natural look of surroundings to catch the attention of rescue team

5. Before entering in jungle what should be made?

Ans. Prior to entering the jungle, whether by bailing out or by crash landing, a mental note of the topography should be made. This should include features like rivers, lakes, paddy fields, high ground, villages etc. The heading and bearing of the aircraft ad the position of the aircrew members, who may have bailed out, will help orientation on the ground and location of crew members.

6. What are jungle hazards?

Ans. Jungle hazards are

(a) Panic
(b) Sun and Heat
(c) Dysentery
(d) Animals Leaches
(e) Ticks
(f) Snakes
(g) Wild Animals

7. Write points during land survival?

Ans. **Personal Hygiene.** This most important and the following points must be borne in mind:

(a) **Care Of Feet.** Wash socks each day, wash your feet thoroughly, keep your foot wear dry by keeping hear the fire at night.

(b) **Sanitary Arrangements.** Keep all sanitary arrangements clear of the shelter or camp. Keep all waste matter covered with a layer of earth to prevent fly breeding.

(c) **Blisters.** These should be treated immediately. The edge may be pricked by a sterilized needle and the fluid pressed out. It should then be kept clean and dry.

8. For what we should log during sea survival?

Ans. Record navigator's last fix, time of ditching, names and condition of personnel, ration schedule, winds, weather, direction of swells and other navigation data. Inventory all equipment. Keep calm. Conserve water and food by conserving energy. Don't move around unnecessarily-life rafts capsize easily.

9. Write about specific items packed in survival kit?

Ans. The specific items in different types of survival packs are as follows:

(a) Desert Type - Extra water bottles.

(b) Snow Type - A sleeping bag.

(c) Sea Type - One man dinghy in Fighter type & multi-men dinghy in Transport / Helicopter along with its accessories. These accessories are:

(i) Fluorescent dye for identification and as shark repellent.

(ii) Chemical Desalination Kit for making sea water drinkable.

ESSAY TYPE (06marks)
AIRMANSHIP

1. Write importance of airmanship?

Ans. (i) Airmanship helps to inculcate the sense of discipline amongst pilots and other crew members.

(ii) It helps the pilot to know the standard procedures laid down for the airfield on which he is operating.

(iii) It helps the pilot to know procedure to be followed in emergency situation.

(iv) Finally, airmanship when studied in correct sense promotes flight safety and prevents aircraft accidents.

(v) Good airmanship ensures a pilot at his best, when the situation is at its worst.

2. Write short notes on aerodrome, airfield, airport?

Ans. **Aerodrome.**A defined area on land or water including any buildings, installations and equipment intended to be used either wholly or in part for the arrival, departure and movement of ac.

Airfield: The airfield refers to an area of land used for takeoff and landing of aircraft and excludes buildings and installations.

Airport: The word airport is mainly used for civil flying establishments which handle international air traffic and, therefore, have a custom house, other travel amenities – port facilities in fact.

3. Write short notes on air route and air report?

Ans. **Air Report.** It is a report passed during the course of a flight in conformity with requirements for position, operational, or meteorological reporting in the AIREP or POMAR forms.

Air Route. The navigable airspace between two points, identified to the extent necessary for the application of flight rules.

4. Write short notes on heading, height, holding point?

Ans. **Heading.** The direction in which the longitudinal axis of an aircraft is pointed usually expressed in degrees from North (magnetic).

Height. The vertical distance of a level, a point or an object considered as appoint, measured from a specified datum.

Holding Point. A point specifically located, identified by visual or other means in the vicinity of which the position of an aircraft in flight is maintained in accordance with air traffic control instructions.

RULES OF THE AIR

1.Write notes on minimum level in instrument flight rule?

Ans. **Minimum Levels.** Except for take off or landing or when specifically authorised by the appropriate authority, an IFR flight shall be flown at a level not below the minimum flight altitude established by DGCA in India or where no such minimum flight altitude has been established at:(a) Over a high terrain or in mountainous areas, at a level which is at least 600 meters (2000 feet) above the highest obstacle located within 8 km of the estimated position of the aircraft.

(b) Elsewhere at a level which is at least 300 meters (1000 feet) above the highest obstacle located within 8 km of the estimated position of the aircraft.

2. Write rules applicable to IFR flight within controlled airspace?

Ans. **Rules Applicable to IFR Flights within Controlled Airspace.** IFR flights shall comply with the provisions of ATC instructions as specified in the general rules. The cruising levels to be used by IFR flights for operation in controlled airspace shall be in accordance with the system of cruising levels in use (as published by the DGCA for India Airspace) except that the correlation of levels to

track prescribed therein shall not apply whenever otherwise specified in ATC clearance.

3. Write short notes on communication and position reports?

Ans. **Communication.** An IFR flight operating within specified areas or along specified routes outside controlled airspace shall maintain a listening out watch on the appropriate radio frequency and establish two way communication as necessary, with the ATS units providing flight information service / advisory service.

Position Reports. An IFR flight operating outside controlled airspace shall comply with the following provisions

(a) Submit a flight plan.

(b) Maintain listening out watch on the appropriate radio frequency and establish two way communication as necessary with the air traffic service units providing flight information service and shall report position as specified (rules of the Air-General).

4. Laid down the basic rules to reduce the risk of collision?

Ans. The following are some of the basic rules laid down to reduce the risk of collision in right of way procedure the aircrafts are to give way to each other in the following orders.

1. Aero planes
2. Helicopters
3. Airships
4. Tug and glider combinations
5. Gliders
6. Balloons

5. Write short notes on overtaking and landing?

Ans. **Overtaking**:An aircraft overtaking another aircraft is to avoid the overtaking aircraft by altering heading to the right, and is to keep clear until all risk of collision is past. Sub para (a) does not apply to this rule. An aircraft is overtaking another aircraft, when it is approaching from the rear at an angle of less than 70 degree to the fore and aft axis of the overtaken aircraft.

Landing:Aircraft in the final stage of landing have the right of way over aircraft in the air and on the ground. Sub para (a) does not apply to this rule.

6. Write short notes on emergency landing?

Ans. **Emergency landing**: An aircraft seen, or known to be carrying out an emergency landing has the right of way over all others. Every aircraft obliged by the above rules to keep out of the way of another, is, if possible, to avoid passing

over a under the other or crossing ahead of it. The aircraft having the right of way should normally maintain its heading and speed.

CIRCUIT PROCEDURES

1. Write short notes on downwind leg and final approach leg?

Ans. **Downwind leg** is a flight path, opposite to the direction of landing, which is parallel to and at a sufficient distance from the landing runway to permit a standard rate –one turn to the base leg.

Final approach leg is a flight path in the direction lf landing, commencing at least ¼ mile from the runway threshold, wherein an airplane is in line with the landing runway and descending towards the runway threshold.

2. After landing what you should do first?

Ans. After landing you should clear the runway without delay by continuing forward to the nearest available taxi strip or turn off point. Continue to taxi until you have crossed the taxi position hold line, or until you are at least 200ft from the runway. You must not exit a runway onto another runway unless authorised by ATC to do so. If you have landed beyond the last turn up point, proceed to the end of the runway, turn off and wait for permission to taxi back to an intersection. Do not turn and taxi back against the direction of landing traffic unless instructed to do so by the tower. When clear of the active runway, the tower will advise you to switch to ground control who will give you instructions and authorisation to taxi to the parking areas.

ATC RT PROCEDURE

1. Write object of air traffic services?

Ans. Objectives of Air Traffic Services

(a) To prevent collision between aircraft.

(b) To prevent collision between aircraft on the manoeuvring area and obstructions on that area.

(c) To expedite and maintain an orderly flow of traffic.

(d) To provide advice and information useful for the safe and efficient conduct of flights.

(e) To notify appropriate organisations regarding aircraft in need of search and rescue aid and assist such organisation as required.

2. Write units of air traffic service and their work?

Ans. Units of air traffic service and their work are as follows

(a) **Area Control Centre.** A unit established to provide air traffic control service to controlled flights, in control areas, under its jurisdiction.
(b) **Approach Control Office.** A unit established to provide air traffic control service to controlled flights arriving at or departing from, one or more aerodromes.
(c) **Aerodrome Control Tower.** A unit established to provide air traffic control service to aerodrome traffic.
(d) **Flight Information Centre.** A unit established to provide flight information service.

3. Write responsibilities of the A.T.S. Unit in India?

Ans. The responsibilities of the A.T.S. Unit in India are
(a) Providing flight information service to aircraft in flights within its region.
(b) Providing Air Traffic Control Service to controlled flights within control areas under its jurisdictions.
(c) Maintaining up-to-date aeronautical information regarding aerodromes and facilities within its region.
(d) Obtaining current weather information.
(e) Handling and assisting diversions of aircraft within its region.
(f) Initiating search and rescue.

4. Define function of area control?

Ans. Functions of area control are
(a) Issuance of ATC clearance for the purpose of preventing collisions between controlled flights under its control and jurisdiction.
(b) To expedite and maintain an orderly flow of traffic of flights provided with area control service.
(c) To provide flight information service.
(d) To provide air traffic advisory service, if required, in advisory area and routes after proper co-ordination with the concerned FIC.
(e) Alerting service.

5. Write short notes on TMA?

Ans. When different airways approach in the vicinity of one more major aerodromes, the resultant terminal airspace is protected and control area is established. Such controlled areas at the confluence of airways are called “Terminal Manoeuvring Areas” (TMA). TMAs are suitably lined with control zones of the aerodromes, located in terminal airspace to facilitate the provision of approach control service for flights arriving at and departing from these aerodromes.

AVIATION MEDICINE

1. Write effect on pilot's body at 10000 feet?

Ans. At 10000 feet, there is a definite but undetectable Hypoxia. This altitude is the highest level at which a pilot should consider himself efficient in judgment and ability. However, conditions operation even at this altitudes for periods of more than, say 4 hours can produce fatigue because of the reduced oxygen supply and a pilot should expect deterioration in concentration, problem solving and efficiency.

2. What is hyperventilation, under which condition it occurs?

Ans. Hyperventilation, or over breathing, is an increase in respiration that upsets the natural balance of oxygen and carbon dioxide in the system, usually as a result of emotional tension or anxiety. Under conditions of emotional stress, fright or pain, a person may unconsciously increase his rate of breathing, thus expelling more carbon dioxide than is being produced by muscular activity. The result is a deficiency of carbon dioxide in the blood.

3. What are the causes of acute fatigue and its treatment?

Ans. Fatigue is caused by many things: lack of sleep, poor nutrition, stretch, prolonged and repeated flights, air craft noise, eye strain, vibration, wide vibrations in temperature and humidity, heavy work load and uncomfortable working conditions, boredom, monotony, night flights, frustration from work and family.

Acute fatigue is easily treated by a meal and a good sleep.

SURVIVAL

1. Write the pattern on survival depends?

Ans. The pattern of survival depends upon

(a) Pre Flight plan.
(b) Protection from animals, enemies, environment.
(c) Location of aids.
(d) Water, food and health hazards.

2. Write factors promoting chances of survival?

Ans. Factors promoting chances of survival are

(a) Common sense.
(b) Determination and will to survive.
(c) Courage.
(d) Training

(e) Equipment.
(f) Luck.

3. Write factors reducing chances of survival?

Ans. Factors reducing chances of survival are

(a) **Psychological.** Panic, fear, loneliness, boredom fear of unknown, darkness and jungle animals.

(b) **Physiological.** Heat / Cold, injuries, illness, shortage of food and water.

4. Write various stages of survival and describe in-flight stage?

Ans. Various stages of survival are

(a) Pre-Flight
(b) In Flight
(c) Post Flight

In Flight: Communicate to the base about emergency, location and decision to abandon aircraft. During descent with the aircraft or by parachute observe all ground features, as far as possible.

4. Describe subsequent action in survival?

Ans. **Subsequent Action.** Signalling so as to indicate your own location and help rescue team in locating the survivors. This is done by using mini flare or radio sets provided with the survival pack. Signalling can also be done by smoke, fire , pyro-technique or heliograph. Do everything and anything to disturb the natural look of surroundings to catch the attention of rescue team.

5. Prior entering in jungle what should be made?

Ans. **Entering Jungle.** Prior to entering the jungle, whether by bailing out or by crash landing, a mental note of the topography should be made. This should include features like rivers, lakes, paddy fields, high ground, villages etc. The heading and bearing of the aircraft ad the position of the aircrew members, who may have bailed out, will help orientation on the ground and location of crew members.

6. What things to be there during camping in survival?

Ans. **Camping.** When camping chooses a site close to sources of water, food and solid ground, taking whatever natural protection is available from the weather. Avoid areas where there is dead and decaying vegetation. Prepare the site and light a fire as soon as possible, both to drive away insects and also for cooking. When the fire has produced a certain amount of ash, spread it in an unbroken line round the camp site to prevent the intrusion of crawling insects. Lighting a fire is not as simple as Survival. It would appear, and this becomes even more difficult when improvised methods are used. It would pay aircrew to practice the several methods of lighting a fire, e.g. by user of sun glass drill method, flint and steel etc.

7. Describe in brief, type of personal hygiene required during survival?

Ans. **Personal Hygiene.** This most important and the following points must be borne in mind:

(a) **Care Of Feet.** Wash socks each day, wash your feet thoroughly, keep your foot wear dry by keeping hear the fire at night.

(b) **Sanitary Arrangements.** Keep all sanitary arrangements clear of the shelter or camp. Keep all waste matter covered with a layer of earth to prevent fly breeding.

(c) **Blisters.** These should be treated immediately. The edge may be pricked by a sterilized needle and the fluid pressed out. It should then be kept clean and dry.

8. What the things we have to record during sea survival?

Ans. During sea survival we have to keep log of record navigator's last fix, time of ditching, names and condition of personnel, ration schedule, winds, weather, direction of swells and other navigation data. Inventory all equipment. Keep calm. Conserve water and food by conserving energy. Don't move around unnecessarily-life rafts capsize easily.

9. Which types of items are there in various survival kit?

Ans. The specific items in different types of survival packs are as follows:

(a) Desert Type - Extra water bottles.

(b) Snow Type - A sleeping bag.

(c) Sea Type - One man dinghy in Fighter type & multi-men dinghy in Transport / Helicopter along with its accessories. These accessories are:

(i) Fluorescent dye for identification and as shark repellent.

(ii) Chemical Desalination Kit for making sea water drinkable.