

**Chettinad**

College of Engineering &amp; Technology

Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai.

**Department of Electronics and Communication Engineering****EC8094 – Satellite Communication****Unit I - MCQ Bank**

1. What happens if a satellite is launched vertically and released at its design altitude?

a) Continue to orbit the earth

**b) Fall back**

c) Overshoots the altitude and moves at a constant speed

d) Stays where it was released

Answer: b

2. The satellite is accelerating as it orbits the earth.

**a) True**

b) False

Answer: a

3. Why does the orbit take the shape of an ellipse or circle?

**a) Position can be easily determined**

b) Consume less fuel

c) Most efficient geometry

d) Better coverage on earth

Answer: a

4. The direction of orbit in the same direction of earth rotation is called \_\_\_\_\_

a) Retrograde

**b) Prograde**

c) Perigee

d) Apogee

Answer: b

5. When is the speed of the satellite maximum in an elliptical orbit?

- a) Retrograde
- b) Posigrade
- c) Perigee**
- d) Apogee

Answer: c

6. Satellites closer to the earth travel at lower speeds than satellites that are far away from earth.

- a) True
- b) False**

Answer: b

7. The time period taken by the satellite to complete one orbit is called \_\_\_\_\_

- a) Lapsed time
- b) Time period
- c) Sidereal period**
- d) Unit frequency

Answer: c

8. The period of time that elapses between the successive passes of the satellite over a given meridian of earth longitude is called as \_\_\_\_\_

- a) synodic period**
- b) Lapsed time
- c) Time period
- d) Sidereal period

Answer: a

9. What is the angle of inclination for a satellite following an equatorial orbit?

- a)  $0^\circ$
- b)  $180^\circ$
- c)  $45^\circ$
- d)  $90^\circ$

Answer: a

10. The angle between the line from the earth station's antenna to the satellite and the line between the earth station's antenna and the earth's horizon is called as \_\_\_\_\_

- a) Angle of inclination
- b) Angle of elevation**
- c) Apogee angle
- d) LOS angle

Answer: b

11. The satellite that is used as a relay to extend communication distance is called as \_\_\_\_\_

- a) Relay satellites
- b) Communication satellites**
- c) Repeater satellites
- d) Geosynchronous satellites

Answer: b

12. The transmitter-receiver combination in the satellite is known as a \_\_\_\_\_

- a) Relay
- b) Repeater
- c) Transponder**
- d) Duplexer

Answer: c

13. The downlink frequency is lower than the uplink frequency.

a) **True**

b) False

Answer: a

14. What is the reason for carrying multiple transponders in a satellite?

a) **More number of operating channel**

b) Better reception

c) More gain

d) Redundancy

Answer: a

15. Why are VHF, UHF, and microwave signals used in satellite communication?

a) More bandwidth

b) More spectrum space

c) **Are not diffracted by the ionosphere**

d) Economically viable

Answer: c

16. What is the reason for shifting from c band to ku band in satellite communication?

a) Lesser attenuation

b) Less power requirements

c) More bandwidth

d) **Overcrowding**

Answer: d

17. Which of the following bands cannot be used for satellite communication?

- a) **MF**
- b) Ku
- c) X
- d) C

Answer: a

18. What is the maximum theoretical data rate if a transponder is used for binary transmission and has a bandwidth of 36MHz?

- a) 32Mbps
- b) **72Mbps**
- c) 36Mbps
- d) 12Mbps

Answer: b

19. Why are techniques like frequency reuse and spatial isolation carried out?

- a) **Reduce traffic load**
- b) More gain
- c) High speed
- d) Error detection

Answer: a

20. Which technique uses two different antennas to reduce traffic on the same frequency?

- a) Spatial isolation
- b) **Frequency reuse**
- c) Multiplexing
- d) Modulation

Answer: b

21. What is the use of the band pass filter in the receiver section?

- a) **Protects the receiver**
- b) Increases antenna gain
- c) Reduces noise
- d) To reduce it to an intermediate frequency

Answer: a

22. The satellite in the earth station must be steerable even for a geosynchronous satellite.

- a) **True**
- b) False

Answer: a

23. In Rf tuning, what is the first local oscillator?

- a) Quartz oscillator
- b) **Frequency synthesizer**
- c) Magnetic oscillator
- d) Electric oscillators

Answer: b

24. If the earth station downlink signal received is at  $f_s = 4.08$  GHz, what first stage local-oscillator frequency  $f_{LO}$  is needed to achieve IF of 770 MHz?

- a) **3310 MHz**
- b) 4080 MHz
- c) 1203 MHz
- d) 3250 MHz

Answer: a

25. Which of the following amplifiers is used in the transmitter substation?

- a) RF amplifiers
- b) Buffer amplifiers
- c) **Klystron amplifier**
- d) Operational amplifiers

Answer: c

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