

1. Which of the following is the first active satellite?

- A. Echo I
- B. Telstar I
- C. Early Bird
- D. Sputnik I

2. Which of the following is the first commercial satellite?

- A. Early Bird
- B. Telstar
- C. Explorer
- D. Courier

3. What is the first passive satellite transponder?

- A. Sun
- B. Early Bird
- C. Score
- D. Moon

4. The first satellite to receive and transmit simultaneously

- A. Intelsat I
- B. Agila I
- C. Syncorn I
- D. Telstar I

5. A helical antenna is used for satellite tracking because of

- A. circular polarization
- B. maneuverability
- C. beamwidth
- D. gain

6. Repeaters inside communications satellites are known as

- A. Transceivers
- B. Transponders
- C. Transducers
- D. TWT

7. Considered as the unsolved problem in satellite system

- A. Coverage
- B. Cost
- C. Access
- D. Privacy

8. _____ is a satellite that rotates around the earth in a low-altitude elliptical or circular pattern.

- A. Geosynchronous satellite
- B. Nonsynchronous satellite
- C. Prograde satellite
- D. Retrograde satellite

9. Is the geographical representation of a satellite antenna radiation pattern

- A. Footprint
- B. Spot
- C. Earth
- D. Region

10. The smallest beam of a satellite antenna radiation pattern

- A. Zone beam
- B. Hemispheric beam
- C. Spot beam
- D. Global beam

11. A satellite beam that covers almost 42.4% of the earth's surface.

- A. Zone beam
- B. Hemispheric beam
- C. Spot beam
- D. Global beam

12. What is the frequency range of C-band?

- A. 8.5 to 12.5 GHz
- B. 3.4 to 6.425 GHz
- C. 12.95 to 14.95 GHz
- D. 27.5 to 31 GHz

13. A satellite signal transmitted from a satellite transponder to earth's station.

- A. Uplink
- B. Downlink
- C. Terrestrial
- D. Earthbound

14. Collects very weak signals from a broadcast satellite

- A. Helical antenna
- B. Satellite dish
- C. LNA

- D. TWT

15. What is a device that detects both vertically and horizontally polarized signals simultaneously?

- A. Orthomode transducer
- B. Crystal detector
- C. Optoisolator
- D. Isomode detector

16. _____ detects the satellite signal relayed from the feed and converts it to an electric current, amplifies and lower its frequency.

- A. Horn antenna
- B. LNA
- C. Satellite receiver
- D. Satellite dish

17. Is a loss of power of a satellite downlink signal due to earth's atmosphere.

- A. Atmospheric loss
- B. Path loss
- C. Radiation loss
- D. RFI

18. What height must a satellite be placed above the surface of the earth in order for its rotation to be equal to earth's rotation?

- A. 26,426.4 miles
- B. 27,426.4 miles
- C. 23,426.4 miles
- D. 22,426.4 miles

19. Point on the satellite orbits closest to the earth.

- A. Apogee
- B. Perigee
- C. Prograde
- D. Zenith

20. The earth area covered by a satellite radio beam.

- A. Beamwidth
- B. Bandwidth
- C. Footprint
- D. Zone

21. What is the local oscillator (mixer) frequency of the satellite with an uplink frequency in GHz band?

- A. 3500 MHz
- B. 4500 MHz
- C. 2225 MHz
- D. 2555 MHz

22. What kind of battery panels are used in some advance satellites

- A. Germanium based panels
- B. Silicon based panel
- C. Galium Phosphate solar panel array
- D. Galium Arsenide solar panel array

23. Satellite engine uses

- A. jet propulsion
- B. ion propulsion system
- C. liquid fuel
- D. solar jet

24. A satellite batter has more power but lighter.

- A. Lithium
- B. Leclanche
- C. Hydrogen
- D. Magnesium

25. What kind of battery used by older satellites?

- A. Lithium
- B. Leclanche
- C. Hydrogen
- D. Magnesium

26. VSAT was made available in

- A. 1979
- B. 1981
- C. 1983
- D. 1977

27. What band does VSAT first operate?

- A. L-band
- B. X-band
- C. C-band

- D. Ku-band

28. The first Philippine Mabuhay satellite has how many channels?

- A. 30
- B. 24
- C. 48
- D. 50

29. The first Philippine Agila I will have how many transponders.

- A. 36
- B. 48
- C. 24
- D. 12

30. How many satellite orbital slots are requested by the Philippine Government from ITU?

- A. 2
- B. 4
- C. 6
- D. 8

31. The location of AsiaSat I.

- A. 105.5° East
- B. 151.5° East
- C. 115.5° East
- D. 170.5° East

32. AsiaSat I covers how many countries in Asia?

- A. 38
- B. 10
- C. 28
- D. 15

33. The owner of AsiaSat 2 is

- A. Asia Satellite Telecommunications Company (ASTC)
- B. Japan Satellite System (JSAT)
- C. China Great Wall Industry Corporation
- D. Singapore Satellite Commission

34. What is the approximate path loss from satellite-to-earth station?

- A. 100 dB
- B. 150 dB

- C. 175 dB
- D. 200 dB

35. INTELSAT stands for

- A. Intel Satellite
- B. International Telephone Satellite
- C. International Telecommunications Satellite
- D. International Satellite

36. The frequency of Ku band for satellite communications.

- A. 6/4 GHz
- B. 14/11 GHz
- C. 12/14 GHz
- D. 4/8 GHz

37. A satellite cross-link means

- A. Earth-to-satellite link
- B. Satellite-to-earth link
- C. Satellite-to-satellite link
- D. None of these

38. Earth station uses what type of antenna

- A. Despun antenna
- B. Helical antenna
- C. Toroidal antenna
- D. Cassegrain antenna

39. What is the delay time for satellite transmission from earth transmitter to earth receiver?

- A. 0.5 s
- B. 1.0 s
- C. 5 ms
- D. 0.25 ms

40. The bandwidth of C-band satellite frequency band in U.S.

- A. 500 GHz
- B. 1000 GHz
- C. 1000 MHz
- D. 500 MHz

41. The most common device used as an LNA is

- A. zener diode

- B. tunnel diode
- C. IMPATT
- D. Shockley diode

42. The radiation patterns of earth coverage antennas have a beamwidth of approximately

- A. 21°
- B. 5°
- C. 17°
- D. 35°

43. A mobile satellite array has usually how many elements?

- A. 6
- B. 88
- C. 12
- D. 14

44. In a typical mobile satellite array antenna if three elements are activated, how many elements are deactivated?

- A. 3
- B. 11
- C. 5
- D. 9

45. What circuit is responsible in activating and deactivating adjacent antenna elements in a mobile satellite array?

- A. Radial divider
- B. Divider/combiner
- C. Radial combiner
- D. Radial multiplexer

46. Most mobile satellite array uses _____ in transforming 50 to 150 Ω impedance.

- A. stub
- B. balun
- C. quarter-wavelength transformer
- D. microstrip tapers.

47. The switching from one element to the other element in a typical mobile satellite array.

- A. Series
- B. Radial
- C. Matrix
- D. Shunt

48. A method of multiple accessing where a given RF channel bandwidth is divided into smaller frequency bands.

- A. CDMA
- B. ANIK-D
- C. TDMA
- D. FDMA

49. What is the delay time for satellite transmissions from earth transmitter to earth receiver?

- A. 0.5 s
- B. 1s
- C. 5 ms
- D. 0.25 s

50. As the height of a satellite orbit gets lower, the speed of the satellite _____.

- A. increases
- B. decreases
- C. remains the same
- D. None of the above

Below are the answers key for the Multiple Choice Questions in Satellite Communications - MCQs Part 1.

1. Sputnik I
2. Telstar
3. Early Bird
4. Telstar I
5. circular polarization
6. Transponders
7. Privacy
8. Non synchronous satellite
9. Footprint
10. Spot beam
11. Global beam
12. 3.4 to 6.425 GHz
13. Downlink

14. Satellite dish
15. Orthomode transducer
16. LNA
17. Path loss
18. 22,426.4 miles
19. Perigee
20. Footprint
21. 2225 MHz
22. Gallium Arsenide solar panel array
23. ion propulsion system
24. Lithium
25. Hydrogen
26. 1979
27. C-band
28. 30
29. 36
30. 6
31. 105.5° East
32. 38
33. China Great Wall Industry Corporation
34. 200 dB
35. International Telecommunications Satellite
36. 14/11 GHz
37. Satellite-to-satellite link
38. Cassegrain antenna
39. 0.5 s
40. 500 MHz
41. tunnel diode
42. 17°
43. 14
44. 11

45. Radial divider
46. quarter-wavelength transformer
47. Shunt
48. FDMA
49. 0.5 s
50. increases