**Program: BE-Electronics & Telecommunication Engineering**

**Curriculum Scheme: Revised 2012**

**Examination: Final Year Semester VIII**

**Course Code: ETC 802 and Course Name: Satellite communication and Networks**

**Time: 1hour Max. Marks: 50**

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**SAMPLE PAPER**

Note to the students:- All the Questions are compulsory and carry equal marks .

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| Q1. | Kepler’s second law states that, for equal time intervals, a satellite will sweep out equal areas in its orbital plane, focused at the |
| Option A: | Center |
| Option B: | barycenter |
| Option C: | Corner |
| Option D: | axis |
| Q2. | The Property which describes the orientation of signal with respect to time varying direction and amplitude of EM wave is called as |
| Option A: | Orientation |
| Option B: | Polarization |
| Option C: | De-polarization |
| Option D: | Discrimination |
| Q3. | The orbital period in seconds is |
| Option A: | P= 2π/n |
| Option B: | P= 2π/n2 |
| Option C: | P= π/n |
| Option D: | P= π/n2 |
| Q4. | Satellite position has an/a \_\_\_\_\_\_\_\_\_\_\_ angle with respect to the horizon. |
| Option A: | Azimuth |
| Option B: | Depression |
| Option C: | Elevation |
| Option D: | Critical |
| Q5. | In satellite space communication modulation is used |
| Option A: | AM |
| Option B: | FM |
| Option C: | PWM |
| Option D: | PAM |
| Q6. | Satellite sends back signals to earth by means of |
| Option A: | Yagi antenna |
| Option B: | chicken-mesh antenna |
| Option C: | horn antenna |
| Option D: | dipole antenna |
| Q7. | What is the point on the surface of the earth that is directly below the satellite called? |
| Option A: | Satellite point |
| Option B: | Subsatellite point |
| Option C: | Supersatellite point |
| Option D: | Overhead point |
| Q8. | The three axes which define a satellite’s attitude are |
| Option A: | roll, pitch, and yaw axes |
| Option B: | x, y and z axes |
| Option C: | r, φ and z axes |
| Option D: | r, θ and φ axes |
| Q9. | Mention the different services of satellite systems. |
| Option A: | Broadcasting satellite services |
| Option B: | Signal transmission |
| Option C: | Information transmission |
| Option D: | Binary data transmission |
| Q10. | Define Greenwich hour angle(GHA). |
| Option A: | The angular distance from the I axis to the Greenwich merdian is measured directly as Greenwich sideral time, also known as the Greenwich hour angle. |
| Option B: | The angular distance from the I axis to the Greenwich median is measured directly as Greenwich sideral time, also known as the Greenwich hour angle. |
| Option C: | The angular distance from the I axis to the Greenwich sideral time, also known as the Greenwich hour angle. |
| Option D: | Angle between satellite antenna and earth station antenna |
| Q11. | What is meant by azimuth angle? |
| Option A: | It is defined as the angle produced by intersection of local horizontal plane & the plane passing through the earth station ,the satellite & center of earth. |
| Option B: | It is defined as the angle produced by intersection of local vertical plane & the plane passing through the earth station ,the satellite & center of earth. |
| Option C: | It is defined as the angle produced by intersection of local horizontal plane & center of earth. |
| Option D: | It is defined as the angle produced by transmitting and receiving antenna |
| Q12. | What does a link budget for satellite communication include |
| Option A: | Total cost of satellite |
| Option B: | Cost of satellite plus launch vehicle |
| Option C: | Signal and noise levels in dB |
| Option D: | Margins of error permitted |
| Q13. | The space segment will obviously include the satellites, but it also includes the ground facilities needed to keep the satellites operational, these being referred to: |
| Option A: | As the tracking, telemetry, and command (TT&C) facilities. |
| Option B: | The earth station is receiving the signal and the satellite is transmitting it. |
| Option C: | signal transmission |
| Option D: | signal reception |
| Q14. | Which of the following amplifiers is used in the transmitter substation? |
| Option A: | RF amplifiers |
| Option B: | Buffer amplifiers |
| Option C: | Klystron amplifier |
| Option D: | Operational amplifiers |
| Q15. | The optimum working frequency for satellite systems lies between |
| Option A: | 20 MHz and 100 MHz |
| Option B: | 2 GHz and 12 GHz |
| Option C: | 20 GHz and 100 GHz |
| Option D: | 100 GHz and 200 GHz |
| Q16. | In TV broadcast via satellite the TV signal from the main broadcast station is routed to the earth station via |
| Option A: | Low power transmitters |
| Option B: | Microwave links |
| Option C: | TV relay stations |
| Option D: | Microwave repeater stations |
| Q17. | Which is better for avoiding jamming? |
| Option A: | Direct sequence spread spectrum |
| Option B: | Frequency hopping spread spectrum |
| Option C: | Time hopping spread spectrum |
| Option D: | Direct sequence & Time hopping |
| Q18. | Which is more suitable when large number of transmitters are used? |
| Option A: | Synchronous CDMA |
| Option B: | Asynchronous CDMA |
| Option C: | Synchronous & Asynchronous CDMA |
| Option D: | FDMA |
| Q19. | Frequency planning is very essential in |
| Option A: | FDMA |
| Option B: | TDMA |
| Option C: | FDMA & TDMA |
| Option D: | CDMA |
| Q20. | Protocols are set of rules to govern \_\_\_\_\_\_\_\_\_ |
| Option A: | Communication |
| Option B: | Standard |
| Option C: | Metropolitan communication |
| Option D: | Bandwidth |
| Q21. | What is the number of satellites present in the Iridium system? |
| Option A: | 72 |
| Option B: | 51 |
| Option C: | 66 |
| Option D: | 32 |
| Q22. | For an elliptical orbit? |
| Option A: | 0≤ e ≤1. |
| Option B: | e =0 |
| Option C: | e =1 |
| Option D: | e= -1 |
| Q23. | What is meant by transponder? |
| Option A: | In a communication satellite, the equipment which provides the connecting link between the satellite’s transmit & receive antennas is referred to as the transponder. |
| Option B: | In a communication satellite, the equipment which provides the power supply is referred to as the transponder. |
| Option C: | It is amplifier |
| Option D: | It is Modulator |
| Q24. | What is the reason for carrying multiple transponders in a satellite? |
| Option A: | More number of operating channel |
| Option B: | Better reception |
| Option C: | More gain |
| Option D: | Redundancy |
| Q25. | . ………….is a loss of power of a satellite downlink signal due to earth’s atmosphere. |
| Option A: | Atmospheric loss |
| Option B: | Path loss |
| Option C: | Radiation loss |
| Option D: | RFI |