**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 |