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**Question Paper Code : 21198**

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2014.

Seventh Semester

Electronics and Communication Engineering

EC 1403.— SATELLITE COMMUNICATION

(Regulation 2008)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the features of Polar orbiting satellite?
2. Define right ascension of ascending node.
3. Define Roll, Pitch and Yaw.
4. Define input back-off.
5. What are Receiver Feeder losses?
6. Why is the LNA in a satellite receiving system placed at the antenna end of the feeder cable?
7. Define the term preamble and postamble.
8. What is meant by demand assignment signaling and switching?
9. What are the components of GIS?
10. What are the services of GPS?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain about frequency allocations for satellite services. (10)  
(ii) Explain about U.S. Domsats. (6)

Or

- (b) Explain in detail about Orbital elements and Orbital perturbations with suitable example. (16)

12. (a) Explain about advanced Tiros-N spacecraft and Morelos with neat a sketch. (16)

Or

- (b) Explain in detail about antenna look angles and the polar mount antenna. (16)

13. (a) (i) With the aid of a block schematic, briefly describe the functioning of the receive Only home TV systems. (8)

- (ii) An antenna has noise temperature of 100 K and is matched into a receiver which has a noise temperature of 400 K. Calculate the noise power density and the noise power for a bandwidth of 80 MHz. (8)

Or

- (b) (i) A Satellite TV signal occupies the full transponder bandwidth of 86 MHz, and it must provide a C/N ratio of 62dB at the destination earth station. Given that the total transmission losses are 600dB and the destination earth station G/T ration is 81dB/K, calculate the satellite EIRP required. (8)

- (ii) Explain about Master Antenna TV system in detail. (8)

14. (a) (i) Explain the principle behind spectrum spreading and dispreading and how this is used to minimize interference in a CDMA system. Also determine the throughput efficiency of the system. (10)

- (ii) Write short notes on satellite links and TCP. (6)

Or

- (b) Describe briefly about on board signal processing for FDMA/TDMA operation. (16)

15. (a) Explain in detail about Integration of GIS, remote sensing and urban application. (16)

Or

- (b) (i) Explain in detail about elements of interpretation and Interpretation keys characteristics of digital satellite image. (10)

- (ii) Write short notes on Resource information system. (6)