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**Question Paper Code : 21428**

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2015.

Eighth Semester

Electronics and Communication Engineering

EC 2045/EC 810/10144 ECE 52 – SATELLITE COMMUNICATION

(Regulations 2008/2010)

(Common to PTEC 2045 – Satellite Communication for B.E. (Part-Time)  
Seventh Semester – ECE – Regulations 2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List the orbital parameters used for positioning a satellite.
2. Give the satellite visibility criteria.
3. Why thermal control segment is essential for a spacecraft?
4. Define the term "EIRP".
5. List the limitations of CDMA.
6. How does the spread spectrum system differ from Conventional communication system?
7. List the features of MATV.
8. Which parameter is generally regarded as figure of merit? Why?
9. What are the applications supported by INTELSAT and INSAT series?
10. What are World Space receivers?

PART B — (5 × 16 = 80 marks)

11. (a) With neat and relevant diagrams, derive the expression for computing the look angles required for positioning the satellite using sub-satellite points. (16)

Or

- (b) What are Launch vehicles? List some of them with its significance. In detail, explain the launching procedures, with the required diagrams. (16)
12. (a) Elaborate on how the attitude and orbit control system (AOCS) is achieved through spin stabilisation systems? Give necessary diagrams. (16)

Or

- (b) Using the Friis transmission formulae, Perform a uplink and downlink derivation and analyse all the factors related to the performance of a satellite link in terms of carrier-to noise ratio. (16)
13. (a) In detail, comment on the pros and cons of Satellite system based on TDMA. Also explain the TDMA frame format in detail with relevant diagrams. (16)

Or

- (b) Give a detailed note on the major highlights of the various satellite access schemes. (16)
14. (a) Discuss in detail on the various building blocks of a digital earth Station Transmitter and receiver and their antennas with a block diagram. (16)

Or

- (b) Give a complete picture on the practical measurements performed on the G/T ratio and Antenna gain measurements. (16)
15. (a) Give a detailed note on DTH and DBS services by projecting the major differences between. (16)

Or

- (b) Discuss elaborately on the various mobile satellite services, its associated challenges and its impact on services, when delivered by satellites. (16)