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**Question Paper Code: 39417**

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

Seventh Semester

Electronics and Communication Engineering

01UEC917 - SATELLITE COMMUNICATION PRINCIPLES AND APPLICATIONS

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Define look angle.
2. What are the conditions required for an orbit to be geostationary?
3. Write short notes on attitude control system.
4. State pitch angle.
5. List the advantages of TDMA over FDMA.
6. Distinguish preassigned and demand assigned traffic.
7. Write the features of CATV.
8. What are the requirements of an outdoor unit of MATV?
9. Name the antennas used in MSAT and compare them.
10. Write down the various applications of Radar sat.

PART - B (5 x 16 = 80 Marks)

11. (a) (i) State Kepler's three laws of planetary. Explain their relevance to artificial satellites orbiting the earth. (10)

(ii) Discuss about various satellite orbits. (6)

Or

(b) (i) Explain the significance of station keeping. (10)

(ii) Illuminate the limits of visibility and sun transit outage. (6)

12. (a) Explain the limits of visibility and sun transit outage. (16)

Or

(b) Draw the neat sketch and explain the Input Demultiplexer. (16)

13. (a) (i) Compare the uplink power requirements for FDMA and TDMA. (8)

(ii) Draw the block diagram of satellite-switched TDMA and explain. (8)

Or

(b) Draw the block diagram of spread spectrum communication system and explain. (16)

14. (a) (i) Draw and explain the block diagram of a transmit-receive earth station. (8)

(ii) Discuss on the design requirements of small earth station antennas. (8)

Or

(b) Explain the features of MATV and CATV systems with neat diagram. (16)

15. (a) Write a short note on

(i) INMARSAT (8)

(ii) GRAMSAT (8)

Or

(b) Describe the operation of direct to home broadcast system and also mention the advantages of DTH. (16)