Reg. No. :

Question Paper Code: 31484

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

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. State Kepler's second law.

2. Define apogee and perigee.

3. List the elements in a transponder.

4. What is meant by frequency reuse?

5. List the advantages of TDMA over FDMA.

6. Distinguish preassigned and demand assigned traffic.

7. State the reason for the high power amplifier in earth stations.

8. A satellite downlink at 10GHz operates with a transmit power of 5w and an antenna gain of 48.2dB. Estimate the EIRP in dBW.

9. What is the principle behind DTH and GPS?

10. Summarize the regions covered by INMARSAT.

PART - B (5 x 16 = 80 Marks)

11. (a) Describe the terms of Earth orbiting satellites. (16)

Or

(b) (i) Explain the orbital perturbations in detail. (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) Illustrate the features of various multiple access schemes deployed for satellite access and compare it. (16)

Or

(b) Explain the principle behind the spectrum spreading and dispreading and how this is used to minimize interference in a CDMA system. (16)

14. (a) Explain in detail about of the master antenna TV system with neat diagram. (16)

Or

(b) Explain the EIRPand Transmission losses. (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)

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