CBCS SCHEME

USN

17EC755

Seventh Semester B.E. Degree Examination, Jan./Feb.2021

Satellite Communication

Time: 3 hrs. Max. Marks: 100

Note: ***Answer any FIVE full questions, choosing ONE full question from each module.***

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

Module-1

1 a. Define and explain three laws of Kepler to describe the motion of an artificial satellite around earth. **(10 Marks)**

b. Briefly explain any five orbital parameters to determine a satellite orbit with suitable sketches. **(10 Marks)**

OR

2 a. With neat sketches, explain satellite stabilization. **(10 Marks)**

b. Define Eclipses. With a neat diagram, explain solar and lunar eclipse. **(10 Marks)**

Module-2

3 a. Explain solar energy driven power supply system of a satellite. **(10 Marks)**

b. Describe the Telemetry, Tele command and tracking control monitoring system of a communication satellite. **(10 Marks)**

OR

4 a. List and explain the types of earth stations on basis of service provided by them and their usage. **(10 Marks)**

b. Discuss in detail about earth station testing (any one method in mandatory tests). **(10 Marks)**

Module-3

5 a. Describe the important parameters that influence the design of a satellite communication link. **(08 Marks)**

b. Briefly explain the basic concepts of TDMA and FDMA. **(12 Marks)**

OR

6 a. Explain general TDMA frame structure. **(10 Marks)**

b. With usual notation, derive satellite transmission equation. **(06 Marks)**

c. Discuss about CDMA. **(04 Marks)**

Module-4

7 a. With neat sketches, explain VSAT. **(10 Marks)**

b. Explain communicates relation application of satellite. **(10 Marks)**

OR

8 a. Define transponder. Explain the types of transponder used in satellite. **(10 Marks)**

b. Discuss the advantages and disadvantages of satellite over terrestrial network. **(06 Marks)**

c. List the frequency bands used in satellite communication. **(04 Marks)**

Module-5

9 a. Classify the sensors used in remote sensing satellites and explain remote sensing system. **(10 Marks)**

b. With suitable sketches, explain working of GPS. **(10 Marks)**

OR

10 a. Mention the applications of weather forecasting satellites and also remote sensing satellites. **(10 Marks)**

b. Explain microwave remote sensing and thermal remote sensing system. **(10 Marks)**

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