

GBCS SCHEME

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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.

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)

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.

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 communication 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)

