



CBCS SCHEME

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18MT644

Sixth Semester B.E. Degree Examination, June/July 2023

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. Explain Satellite, Orbit, Trajectory, Centripetal force and centrifugal force with schematic diagrams. (10 Marks)
- b. Explain three Kepler's laws of planetary motion with schematic diagrams. (10 Marks)

OR

- 2 a. Explain Injection velocity and Resulting Satellite Trajectories. With relevant equations and diagrams. (10 Marks)
- b. Explain types of satellite orbits based on orientation of the orbital plane, eccentricity and distance from earth. (10 Marks)

Module-2

- 3 a. Explain solar energy driven regulated bus power supply system with neat diagram. (10 Marks)
- b. Define solar panels and discuss the operation of a solar cell with neat diagram. (10 Marks)

OR

- 4 a. Explain Tracking, Telemetry and command subsystem with neat diagrams. (10 Marks)
- b. Explain Fixed Satellite Service [FSS] Broadcast Satellite Service [BSS] and Mobile Satellite Service [MSS] earth stations with their characteristic features. (10 Marks)

Module-3

- 5 a. Explain the Global Positioning Satellite [GPS] system with various segments. (10 Marks)
- b. Explain the working principle of GPS. (10 Marks)

OR

- 6 a. Explain GLONASS Satellite system, with various segments. (10 Marks)
- b. Explain the applications of Satellite Navigation Systems. (10 Marks)

Module-4

- 7 a. Explain Basic Elements of a Satellite communication system with neat diagram. (10 Marks)
- b. Explain advantages of satellites over terrestrial networks. (10 Marks)

OR

- 8 a. Explain TVRO services with neat diagram and salient features. (10 Marks)
- b. Explain DBS service with neat diagram and salient features. (10 Marks)

Module-5

- 9 a. Explain optical remote sensing systems with neat schematic diagram. (10 Marks)
- b. Explain thermal infrared remote sensing systems with neat schematic diagram. (10 Marks)

OR

- 10 a. Explain Microwave remote sensing systems with neat schematic diagram (10 Marks)
- b. Explain various types of sensors on board remote sensing satellites. (10 Marks)

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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.