

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.