



CBCS SCHEME

15EC755

Seventh Semester B.E. Degree Examination, July/August 2021

Satellite Communication

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions.

- 1 a. Explain Kepler's laws of planetary motion. (09 Marks)
b. A satellite is moving in an elliptical orbit with the major axis equal to 42,000 km. If the perigee distance is 8000 km, find the Apogee and orbit eccentricity. (04 Marks)
c. List the types of satellite orbit. (03 Marks)
- 2 a. Differentiate spin stabilization and body stabilization. (03 Marks)
b. What are the orbital effects on satellite performance? Explain. (07 Marks)
c. Explain look angle and azimuth angle with relevant figures. (06 Marks)
- 3 a. Explain with neat figure the principle of operation of a solar cell. (06 Marks)
b. Write a note on tracking telemetry and command sub system. (08 Marks)
c. What is payload? (02 Marks)
- 4 a. List and explain different types of earth station. (08 Marks)
b. What is receiver figure of merit (G/T)? (02 Marks)
c. Which are the different tasks performed by earth stations satellite tracking system? (06 Marks)
- 5 a. How do you calculate the overall noise to carrier ratio for a satellite link? (02 Marks)
b. Explain in detail SCPC/FM/FDMA system. (08 Marks)
c. With frequency time graph, explain DS-CDMA system, FH-CDMA and TH-CDMA system. (06 Marks)
- 6 a. Explain satellite link parameters which influence the design of a satellite communication link. (08 Marks)
b. Explain fading due to multipath signals for a fixed satellite and mobile satellite terminal. (08 Marks)
- 7 a. With neat block diagram, explain basic elements of a satellite communication system. (10 Marks)
b. What are the advantages of satellites over terrestrial networks? (06 Marks)
- 8 a. Explain typical satellite TV network. (07 Marks)
b. What is DTH? Name the two broadly classified DTH services. (03 Marks)
c. Write a note on VSAT. (06 Marks)
- 9 a. Explain optical remote sensing system with neat figure. (07 Marks)
b. Write a note on LFC camera. (05 Marks)
c. What are monogenic and polygenic secondary images? (04 Marks)
- 10 a. What are weather forecasting satellite orbits? (04 Marks)
b. Write a detailed note on GPS. (08 Marks)
c. Name some applications of satellite navigation system. (04 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.