

Seat
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DFI1363

Satellite Communication (New) (1300)

P. Pages : 2

Time : Three Hours

Max. Marks : 100

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Answersheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Assume suitable data if required.
5. Use of non programmable calculator is allowed.
6. All questions carry equal marks.
7. Answer **any two** from each unit.

UNIT - I

1. a) Explain various types of orbital perturbations affecting the system performance. 10
b) Explain Kepler's laws of planetary motion, Calculate the radius of a circular orbit for which the period is 1 day. 10
c) Describe antenna look angles and how are they calculated. 10

UNIT - II

2. a) Explain various types of atmospheric losses. What is cross polarization. 10
b) Explain how depolarization is caused by ionosphere rain and Ice. 10
c) Explain in brief the antenna configurations used for satellite communication system. 10

UNIT - III

3. a) Compare FDMA, TDMA and CDMA. 10
b) Explain link power budget equation.
A satellite link operating at 14 GHz has receiver feeder losses of 1.5 dB and a free space loss of 207 dB. The atmospheric absorption loss is 0.5dB and antenna pointing loss is 0.5 dB. Depolarization losses may be neglected. Calculate the total link loss for clear sky condition. 10

- c) Explain various Transmission losses in satellite communication. 10

UNIT - IV

4. a) Explain TT & C subsystem of satellite. 10
- b) What is transponder and explain its various sections. 10
- c) Discuss design aspect for communication satellite. Explain lifetime reliability. 10

UNIT - V

5. a) Write a short note on GPS. 10
- b) Explain DBS Satellite system. 10
- c) What are the types of non geostationary orbit satellite? Give their advantages, disadvantages and application. 10
