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No.

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मध - 060

## 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. Solve **any two** of the following.

- a) Define antenna look angles. Explain elevation angle and azimuth angle calculation. 10
- b) Explain Kepler's three law of planetary motion. 10
- c) Explain briefly what is mean by sun transit outage. 10

### UNIT - II

2. Solve **any two** of the following.

- a) Explain various types of atmospheric losses What is cross polarization discrimination. 10
- b) Explain offset feed used with paraboloidal refractor antennas; stating its main advantages and disadvantages. 10
- c) Explain various types of depolarization. 10

**UNIT - III**

3. Solve **any two** of the following.

- a) Compare FDMA; TDMA and CDMA. 10
- b) Explain the TDMA technique used in satellite communication system. 10
- c) Explain clearly, link power budget equation and satellite link operating at 14GHZ has receiver feeder losses of 1.5 dB and free space loss of 207 dB. The atmospheric loss is 0.5 dB and antenna pointing loss is 0.5dB. Depolarization losses may be neglected. Calculate the total link loss for clear sky condition. 10

**UNIT - IV**

4. Solve **any two** of the following.

- a) What are the main consideration in the design of earth station ? Explain general configuration of an earth station. 10
- b) What is transponder. Explain with a neat diagram working of a basic transponder. What are functions of front end receiver. 10
- c) Discuss design aspect for communication satellite. Explain life time reliability. 10

**UNIT - V**

5. Solve **any two** of the following.

- a) Explain services provided by GSM. 10
- b) How video conferencing is possible with the application of satellite. 10
- c) Explain the use of satellite in remote sensing application in details. 10

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