

Time: 3 hours

Marks: 80

- NB: 1) Question number 1 is compulsory.  
 2) Answer any three questions out of remaining questions.  
 3) Answer the questions with suitable diagrams.

## 1. Answer the following

(a) Discuss 1) GPS and VSAT

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(b) Compare (i) FH- CDMA and DS-CDMA.  
 (ii) Explain Launching of Geo-stationary satellites

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2. (a) Explain block diagram of Transmit and receive-type of earth station,  
 Explain each block in detail.

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(c) Which types of antennas are used in satellite communication  
 Explain one antenna in detail.

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3. (a) What is Earth eclipse of Satellite ?

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Are there any ways of avoiding eclipse during lifetime of satellite.

(b) Explain the following:

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(i) 1 db Compression point

(ii) AM to PM conversion

4. (a) Describe different stabilization Techniques

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(b) Explain T-T &amp; C system with the help of block diagram.

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5. (a) What is EIRP ? discuss the importance of [G/T] ratio

Calculate overall [C/N] for a satellite link if

[C/N] uplink=25db, [C/N] downlink=20db and [Intermodulation] =12db

(b) Explain SPADE system and SCPC of FDMA

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6. Write short notes on *any two*

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(a) Optical link satellite transmitter and receiver

(b) Onboard connectivity with transparent processing

(c) Frame organization and window organization

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