B.E. (EXTC) (Sem -VIII) (CBSGS)   Date-11/12/1

Duration: 3 Hrs.   **Marks: 80**

NB:

Q.1 is compulsory.

Solve any three from remaining five questions.

Assume suitable data wherever required.

Draw required diagrams neatly.

Q.1 Solve any Five: 20

a) Discuss the signification of Microwave frequency in Satellite communication.

b) Explain different tests conducted for the selection of Satellite component.

c) Explain why 14/12 GHz band is used for DTH application, what are the advantages and disadvantages of this band?

d) Define and explain reliability in satellite.

e) Explain AM/PM conversion.

f) How does back off power affect satellite link performance?

Q.2   20

a) Give a detail comparison between low, medium and high attitude satellite.

b) Discuss the effect of earth's oblateness, moon and sun on the orbit of satellite. Explain "Parking orbit".

Q.3   20

a) A carrier 6/4 GHz satellite uplink has the following data: Earth station EIRP = 80dBW; Earth station satellite distance = 35780 km; attenuation due to atmospheric factor = 2dB; satellite antenna efficiency = 0.8; satellite antenna's aperture area $0.5m^2$; satellite receiver's effective noise temperature = 190K; satellite receiver band width = 20 MHz. Determine the link margin if the threshold value of received carrier to noise ratio is 25dB.

b) Describe the significance of carrier to noise ratio, carrier to noise density ratio and bit energy to noise density ratio.

Q.4   20

a) What are the advantages and disadvantages of pre-assignment and demand assignment multiple access system? Explain how they are implemented in TDMA.

b) Discuss FDMA-SCPC system.

Q.5   20

a) Discuss in brief the general configuration of earth station.

b) Explain on-board connectivity with beam scanning.

Q.6 Write shot note on   20

a) OSI reference model for Satellite Network.

b) Concept and need of Laser satellite system.

c) Factor govern the design of Earth station.

d) Major techniques of attitude control.

****

80270

2337C0CD50FE594F32A7EB635DC8B9B2