

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(ECE) (2011 Batch E-II)
B.Tech.(ETE) (2011 Onwards E-II)
(Sem.-7,8)
SATELLITE COMMUNICATION
Subject Code : BTEC-910
M.Code : 71914

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Answer briefly :

- a) Explain the basic difference between active and passive satellites in systems.
- b) List various bands being used in satellite communication.
- c) What is system noise temperature?
- d) What is rainfall attenuation?
- e) What is Erlang call congestion formula?
- f) What is meant by burst time plan?
- g) Define VSAT Technology.
- h) Write a short note on Remote Sensing.
- i) What kind of photo detectors are being used in optical communication? Explain any one photo detector.
- j) Define Signal to Noise ratio.

SECTION -B

2. List various advantages and disadvantages of satellite communication. Give the reasons that optical fibers inspite of being high bandwidth channel satellite communication has an edge over it.
3. Derive general link equation. Find out expressions for C/N and G/T ratios and also explain the importance of these ratios on satellite link design.
4. Derive the signal to noise ratio for SCPC signals.
5. Define the term INSAT. Explain its importance in satellite communication system. Also discuss INSAT series.
6. Explain the basic blocks of an optical transmitter and compare it with the analogous RF transmitter.

SECTION-C

7. What is satellite communication and how does a communication satellite differ from a communication relay? Also discuss current status of satellite communication.
8.
 - a) Explain the parameters that control the design of earth station.
 - b) A satellite located at 40,000 km from earth operates at a frequency of 11GHZ and has EIRP of 21 db W. If the receiving antenna has a gain of 50.5dB. Find the received power.
9. With a neat block diagrams explain the working of a FDMA based satellite network. Write down its merits and demerits.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.