

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(ETE) (2011 Onwards) (Sem.-7,8)
ADVANCED COMMUNICATION SYSTEMS
Subject Code : BTECT-701
Paper ID : [A3048]

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) Define the term SDH.
- b) Briefly describe the construction of a fiber-optic system.
- c) What are the three most predominant modulation schemes used in digital radio systems?
- d) What is a constellation diagram, how is it used with QPSK?
- e) Define look angles, angle of elevation and azimuth.
- f) Write disadvantages of CDMA.
- g) What is meant by term false handoff?
- h) Briefly describe the functions of an equipment identification registry.
- i) Describe the six essential components of a cellular telephone network.
- j) Describe the term slope over load distortion.

SECTION-B

2. For the QPSK modulator construct the truth table, phaser diagram and constellation diagram.
3. An earth station transmitter has an HPA with a rated saturated output power of 10,000W. The back- off ratio is 6dB, the branching loss is 2dB, the feeder loss is 4dB, antenna gain is 40dB. Determine the actual radiated power and the EIRP.
4. Describe the services provided by GSM.
5. Eight 10Gbps channels are multiplexed using WDM on to the same single mode fiber. How many TDM digitized voice messages can be simultaneously transmitted along the Fiber?
6. Discuss the following diversity techniques :
 - a) Space diversity
 - b) Frequency diversity
 - c) Time diversity.

SECTION-C

7. Explain BPSK system with its transmitter, receiver, Geometrical and band width representation.
8. Write a note on following :
 - a) GPRS
 - b) SONET
9. Explain space, frequency and time diversity techniques and find the velocity and the orbital period of a satellite in a circular orbit :
 - a) 500Km above the earth surface.
 - b) 36000Km above the earth surface.