Code: R7310505

R7

B.Tech III Year I Semester (R07) Supplementary Examinations, May 2013
DATA COMMUNICATION SYSTEMS
(Common to CSE and IT)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks
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1 (a) Name and explain the function of each of the layers of the seven-layer OSI model.
  (b) With neat diagrams describe the two basic types of electronic communication systems.

2 (a) Describe coaxial transmission lines.
  (b) Explain multimode step-index optical fiber. Also mention its advantages and disadvantages.

3 (a) Describe pulse width modulation, pulse position modulation and pulse amplitude modulation.
  (b) Draw the block diagram of a two-channel PCM-TDM system and explain.

4 (a) Determine the wave attenuation between two points with power densities $P_1 = 25$ µW/m^2 and $P_2 = 0.05$ µW/m^2.
  (b) Write short notes on the following:
      (i) Satellite orbits and orbital patterns.
      (ii) Satellite looks angles.

5 (a) Draw and describe the block diagram of a telephone set.
  (b) Describe the basic operation of a cordless telephone.

6 (a) Explain time-division multiple accessing.
  (b) What are the four types of hand offs possible with N-AMPS?

7 (a) List and describe two methods of error correction.
  (b) Determine the VCS for the following data- and CRC-generating polynomials:
          Data $G(x) = x^7 + x^5 + x^4 + x^2 + x^1 + x^0$ = 10110111
          CRC $P(x) = x^5 + x^4 + x^1 + x^0$ = 110011

8 (a) Define and describe high-level data-link control.
  (b) Describe synchronous data-link protocols.

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