

**R09**

**Code: 9A12302**

B.Tech II Year II Semester (R09) Supplementary Examinations December/January 2015/2016

**DATA COMMUNICATION SYSTEMS**  
(Computer Science & Systems Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions  
All questions carry equal marks

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- 1 Write short notes on:
  - (a) Binary phase shift keying.
  - (b) Quadrature amplitude modulation.
  
- 2
  - (a) Explain metallic transmission line types with examples.
  - (b) Briefly describe modes of propagation and index profile of optical fiber cable.
  
- 3
  - (a) Explain Frequency-division multiplexing.
  - (b) List advantages of wavelength division multiplexing.
  
- 4
  - (a) Explain wave attenuation and absorption.
  - (b) Compare three modes of propagating electromagnetic waves.
  
- 5
  - (a) Explain how caller ID operates and when it is used.
  - (b) Describe the operation of electronic telephone.
  
- 6
  - (a) Explain the functionalities of cellular system topology.
  - (b) Explain USDC control channels and IS-136.2.
  
- 7
  - (a) Explain the terms retransmission and forward error correction.
  - (b) Describe error correction procedure in hamming codes.
  
- 8 Find the bandwidth efficiency for a bell system 202-compatible modem, where the data transmission rate is 1200 bps and an available bandwidth is 2700 Hz.

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