

Code No: C3804, C6101, C0603, C7004, C6501**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****M.TECH I SEMESTER EXAMINATIONS APRIL/MAY-2012****ADVANCED DATA COMMUNICATIONS****(COMMON TO DIGITAL ELECTRONICS AND COMMUNICATION SYSTEMS, COMMUNICATION SYSTEMS, DIGITAL SYSTEMS AND COMPUTER ELECTRONICS, ELECTRONICS AND COMMUNICATION ENGINEERING, WIRELESS AND MOBILE COMMUNICATIONS)****Time: 3hours****Max.Marks:60****Answer any five questions****All questions carry equal marks**

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- 1.a) With suitable sketches, explain the operation of 8-PSK modulator and demodulator. Compare bandwidth requirements of 8-PSK and 16 PSK systems.
- b) Explain squaring loop, costas loop and remodulator loop carrier recovery circuits.
- 2.a) Discuss and compare various LAN topologies.
- b) Explain Electrical, Mechanical and functional characteristics of EIA-232 interface standard.
- 3.a) Encode the following message sequence using Hamming code.
11011001
- b) Determine the block check sequence (BCS) for the following data and CRC polynomials
Data $G(x) = x^7 + x^5 + x^4 + x^2 + x^1 + x^0$
CRC $P(x) = x^5 + x^4 + x^1 + x^0$
- 4.a) Explain and compare stop & wait and sliding window protocols.
- b) Describe HDLC frame format.
- 5.a) Explain the operation of a single stage cross bar switch. What are its limitations? How are they eliminated in multistage switches?
- b) Compare circuit switching and virtual circuit switching techniques.
- 6.a) Describe the operation of Time division switches.
- b) Give the features of datagram switching.
- 7.a) Explain CSMA/CD protocol and compare with ALOHA protocol.
- b) Describe the features of CDMA technique.
8. Write a brief note on
 - a) Time division multiplexing
 - b) Asynchronous data link protocols.