

**R16**

Code No: 135AE

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, October - 2020  
DATA COMMUNICATION AND COMPUTER NETWORKS  
(Common to CSE, IT)

Time: 2 hours

Max. Marks: 75

Answer any five questions  
All questions carry equal marks

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- 1.a) Differentiate the OSI and TCP/IP reference models. [7+8]  
b) Compare and contrast ATM and Frame relay networks.
- 2.a) Elucidate the design issues of data link layer. [7+8]  
b) Discuss MAC frame structure for IEEE 802.3.
- 3.a) Convert the IP address whose hexadecimal representation is C22F1582 to dotted decimal notation and explain. [8+7]  
b) Explain the shortest path routing with an example.
- 4.a) Explain about QoS in switched networks. [7+8]  
b) Differentiate integrated and differentiated services in the internet.
- 5.a) Explain the HTTP request method. [8+7]  
b) Explain about WWW.
- 6.a) Explain the characteristics of narrowband ISDN. [7+8]  
b) Describe permanent and switched virtual circuits.
- 7.a) Explain the sliding window protocol with a neat sketch. [7+8]  
b) Frames of 1000 bits are sent over a 1-Mbps-satellite channel. Acknowledgements are always piggybacked onto data frames. The headers are very short. Three-bit sequence numbers are used. What is the maximum achievable channel utilization for (i) Stop-and-wait (ii) Go-back n (iii) Selective Repeat?
- 8.a) Differentiate classful and classless addressing in IPv4. [7+8]  
b) Describe any one multicast routing protocol.

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