

Code No: 09A70403

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, November - 2013

Computer Networks

(Common to ECE, EIE, BME, ECM)

Time: 3 Hours

Max. Marks: 75

**Answer any Five Questions
All Questions Carry Equal Marks**

- 1.a) Write any four reasons for using layered protocols.
- b) List down the advantages and disadvantages of OSI reference model. Compare them with the TCP/IP model. [5+10]
- 2.a) Write the advantages of optical fiber over twisted-pair and coaxial cables.
- b) Differentiate between data gram packet switching and virtual circuit switching. [8+7]
- 3.a) List and explain the services provided by data link layer.
- b) A bit string, 011110111110111110, needs to be transmitted at the data link layer. What is the string actually transmitted after bit stuffing? [10+5]
- 4.a) List and explain the key assumptions of dynamic channel allocation methods.
- b) Discuss in brief MAC frame structure for IEEE 802.3? [5+10]
- 5.a) Discuss about Virtual LAN?
- b) Why is SONET called a synchronous network? Discuss the functions of each SONET layers? [7+8]
- 6.a) What are the differences between classful addressing and classless addressing in IPv4. Briefly define subnetting and Supernetting?
- b) Give the advantages of hierarchical routing.
- c) Explain the Open Shortest Path First (OSPF) routing protocol. [5+4+6]
- 7.a) Explain the Integrated Services QoS model.
- b) What are the header fields in TCP segment header that are required for flow and congestion control? Explain how these fields are used for flow and congestion control. [8+7]
- 8.a) What is the use of DNS? Explain how it works?
- b) Explain the basic principles of cryptography.
- c) What is e-mail? Briefly discuss about the User Agent. [6+4+5]

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