

Code No: 125DT**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year I Semester Examinations, May - 2018****COMPUTER NETWORKS****(Common to CSE, IT)****Time: 3 hours****Max. Marks: 75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A**(25 Marks)**

- 1.a) What is Internet. Differentiate it from intranet. [2]
- b) Discuss the design issues of data link layer. [3]
- c) When do we use hubs? [2]
- d) What are main functionalities of routers? What is purpose of using multiprotocol routers? [3]
- e) What is optimality principle? [2]
- f) Discuss congestion control algorithms on brief. [3]
- g) What is CIDR addressing [2]
- h) Discuss the principles of internetworking. [3]
- i) What is silly window syndrome? [2]
- j) Draw TCP and UDP headers. [3]

PART - B**(50 Marks)**

2. Compare and contrast OSI and TCP/IP reference models. Critique on each model. [10]

OR

- 3.a) Explain sliding window protocol.
- b) Describe go back N protocol. [5+5]

4. Define collision. Explain collision free protocols. Mention advantage of each protocol. [10]

OR

5. Explain the following:
 - a) Bridges
 - b) Gateways
 - c) Repeaters. [10]

- 6.a) The major problem with distance vector routing algorithm is 'count to infinity'. How exchange complete path from router to destination instead of delay, helps in solving count to infinity problem.

- b) Explain the design issues of network layer. [5+5]

OR

7. Discuss the hierarchical routing with examples. [10]

8. Given a network address of 192.168.100.0 and a subnet mask of 255.255.255.192.
a) How many subnets are created?
b) How many hosts are there per subnet? [5+5]
- OR**
- 9.a) Discuss ICMP Messages.
b) Explain Tunneling in Internet layer. [5+5]
10. Illustrate the TCP connections, TCP releases with state transition diagram. [10]
- OR**
11. Describe DNS with diagrams and real-time examples. [10]

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