

**R13**

Code No: 115DT

**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. [5+5]
- 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: [10]
  - a) Bridges
  - b) Gateways
  - c) Repeaters.

- 6.a) The major problem with distance vector routing algorithm is 'count to infinity'. How exchange complete path form 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]

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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?

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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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