

**Code No: 155FM****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year I Semester Examinations, August/September - 2024****INTERNETWORKING with TCP/IP****(Computer Science and Engineering - Networks)****Time: 3 Hours****Max. Marks: 75****Note:** i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.

iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

**PART – A****(25 Marks)**

- 1.a) What is a three-layer switch in networking? [2]
- b) What is the functionality of a gateway in a network? [3]
- c) What are the properties of Internet? [2]
- d) Compare TCP with UDP. [3]
- e) What is congestion in networking? [2]
- f) Write a short note on frame relay congestion control. [3]
- g) Define the term "Buffer" in networking. [2]
- h) What is the purpose of Random Early Detection (RED)? [3]
- i) Define selective retransmission in TCP. [2]
- j) Explain tunneling in Mobile IP. [3]

**PART – B****(50 Marks)**

2. Categorize the services and key protocols associated with each layer of the TCP/IP protocol suite. [10]

**OR**

- 3.a) Evaluate the impact of addressing schemes in TCP/IP networks on global internet connectivity and network management.
- b) Differentiate between bridges and two-layer switches in network design. [5+5]
- 4.a) Illustrate the application-level interconnection with an example.
- b) Explain how TCP handles flow control. [5+5]

**OR**

5. Explain the following:
  - a) IPV6
  - b) Internet architecture. [5+5]

- 6.a) Explain the DEC bit scheme in the context of congestion control.
- b) Discuss the TCP congestion control mechanism in detail. [5+5]

**OR**

- 7.a) Discuss the importance of traffic shaping in achieving QoS.
- b) Compare integrated services with differentiated services in providing QoS. [5+5]

8. Compare and contrast drop tail, drop front, and random drop as passive buffer management schemes. [10]

**OR**

- 9.a) Examine the role of buffer management in achieving optimal performance in Wide Area Networks (WANs).
- b) Support or refute the statement: "Active Queue Management (AQM) algorithms are essential for managing network congestion in modern high-speed networks." [5+5]
- 10.a) Explain the packet format used by SCTP and explain each field in detail.
- b) Discuss the concept of agents in the mobile network layer. [5+5]

**OR**

11. Explain the following terms:
- a) Snooping TCP
- b) Inefficiency in Mobile IP. [5+5]

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Question Paper Aug-2024