

R15

Code No: 127BY

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, December-2023/January-2024

COMPUTER NETWORKS

(Electronics and Communication Engineering)

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

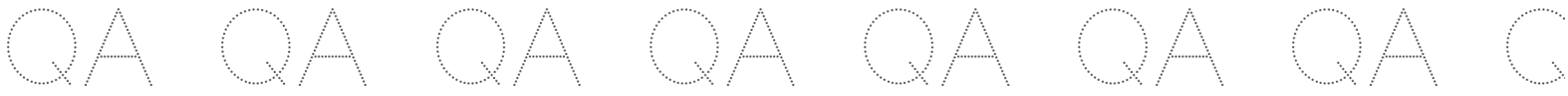
(25 Marks)

- 1.a) What are the design issues of Data link Layer. [2]
- b) Which model is better OSI or TCP/IP? Justify your answer. [3]
- c) Explain the functionality of a Repeater. [2]
- d) What is transmission media? [3]
- e) Distinguish between Static and Dynamic routing. [2]
- f) What is optimality principle? [3]
- g) What is Tunneling? [2]
- h) What are the challenges of Internetworking? [3]
- i) What is a port number? Give the port number of TELNET and SSH. [2]
- j) How DNS is useful in internet? [3]

PART – B

(50 Marks)

- 2.a) A Bit stream 100100 is to be transmitted using standard CRC method with divisor value $x^3 + x^2 + 1$. Generate the CRC code word.
 - b) Explain about the TCP/IP reference model. [5+5]
- OR**
- 3.a) Explain about the operation of Selective Repeat protocol.
 - b) What are the advantages and disadvantages of unshielded twisted pair cable. [5+5]
- 4.a) Differentiate between router and a gateway.
 - b) What do you mean by random access protocols? Explain slotted ALOHA in detail. [4+6]
- OR**
- 5.a) Draw and explain Ethernet 802.3 frame structure.
 - b) Explain about Bit-map protocol. [5+5]



6. Explain about the Distance Vector Routing algorithm with an example. [10]

OR

7.a) Distinguish between connectionless and connection oriented networks.

b) Explain about the count to infinity problem. [5+5]

8.a) Explain about the Address Resolution Protocol.

b) What is IP address? Explain different classes of IP address. [5+5]

OR

9.a) Explain the steps involved in three way handshake to establish connection in TCP.

b) Explain the services of Transport layer. [5+5]

10.a) Explain the header format of Real Time Transport protocol.

b) What is TCP Sliding Window? How does it Work? [5+5]

OR

11.a) Explain the role of POP3 in Electronic mail applications.

b) Discuss the File Transfer Protocol (FTP) with a neat diagram. [5+5]

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