

# END TERM EXAMINATION

THIRD SEMESTER [BCA] JANUARY 2024

Paper Code: BCA-201 Subject: Computer Networks

Time: 3 Hours Maximum Marks: 75

Note: Attempt five questions in all including Q.No.1 which is compulsory. Select one question from each unit.

- Q1 Attempt any five of the following:- (5x5=25)
- a) Define a network. Discuss various Network Criteria.
  - b) Compare TCP and UDP protocols.
  - c) Define Piggybacking and specify its benefit.
  - d) Write a short note on Modems.
  - e) Differentiate between Bridges and Routers.
  - f) In reference to UDP, what is the role of Pseudoheader and the Length field?
  - g) What is bit stuffing and byte stuffing?
  - h) Compare and contrast the different Unguided transmission media.

### UNIT- I

- Q2 What is layered architecture? Explain the OSI model in brief. (6.5)  
 Explain LAN, MAN & WAN. (6)
- OR
- Q3 Discuss the topologies in detail with examples. (7.5)  
 Explain the Shannon capacity theorem. (5)

### UNIT- II

- Q4 What is understood by Flow Control? Explain any one Sliding Window ARQ protocol with diagrams and example. (6.5)  
 Given a 10-bit sequence 1010011110 and a divisor of 1011, find the CRC and check your answer. (6)
- OR
- Q5 Discuss the sliding window protocol. Specify its advantages over stop and wait protocol. (6.5)  
 Distinguish the following (i) Synchronous and Asynchronous TDM (ii) Circuit switching and Packet switching (6)

### UNIT-III

- Q6 Explain the process of Distance vector routing with an example. Explain when the sharing happens and how routing tables are exchanged between routers. (12.5)
- OR
- Q7 A multiplexer combines four 100-Kbps channels using a time slot of 2 bits. Show the output with four arbitrary inputs. Calculate: Frame size, Frame rate, Frame duration, Bit rate of link. (5)  
 What is understood by Classful addressing? Explain. What is its disadvantage? (7.5)

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- Q8 a) Explain the functions and protocols of the Transport Layer. (7.5)  
 b) Explain Connection Management in reference to transport layer. (5)
- OR
- Q9 Explain the Functions of Session layer, Presentation layer and Application layer. (12.5)

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