(Please write your Exam Roll No.) Exam Roll No. .....

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 a) What is layered architecture? Explain the OSI model in brief. **(6.5)**
b) Explain LAN, MAN & WAN. **(6)**

OR

Q3 a) Discuss the topologies in detail with examples. **(7.5)**
b) Explain the Shannon capacity theorem. **(5)**

UNIT- II

Q4 a) What is understood by Flow Control? Explain any one Sliding Window ARQ protocol with diagrams and example. **(6.5)**
b) Given a 10-bit sequence 1010011110 and a divisor of 1011, find the CRC and check your answer. **(6)**

OR

Q5 a) Discuss the sliding window protocol. Specify its advantages over stop and wait protocol. **(6.5)**
b) 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) 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)**
b) What is understood by Classful addressing? Explain. What is its disadvantage? **(7.5)**

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UNIT- IV

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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