UTTARANCHAL UNIVERSITY, DEHRADUN
UTTARANCHAL SCHOOL OF COMPUTING SCIENCES
MID TERM EXAMINATION
EVEN SEMESTER 2024-25
BCA | 4TH SEMESTER
COMPUTER NETWORKS | BCA – C402

Time: **1:15 Hour** Max. Marks: 30

Note: All questions are compulsory.

Q.1- Answer the following questions. **(1 x 6 = 6 Marks)**

Multiple Choice Questions

a) Which one of the following protocol responsible for IP addressing and the fragmentation and reassembly of packets (CO-2, BL-1)

a. SMTP b. IP
c. UDP d. None of These

b) Which one of the following is not a function of network layer? (CO-3, BL-1)

a. routing b. inter-networking
c congestion control d. error control

c) Which of the following is the multiple access protocol for channel access control? (CO-1, BL-1)

a. CSMA/CD b. CSMA/CA
c. Both a & b d. HDLC

State True/ False

d) In CDMA, one channel carries all transmissions simultaneously. (CO-3, BL-1)

e) CSMA requires that each station first listen to the medium before sending. (CO-2, BL-1)

f) The datalink layer is responsible for movements of individual bits from one hop (node) to the next. (CO-2, BL-1)

Q.2-Write a short note on any two (up to 70 words) **(2 x 3 = 6 Marks)**

a) What is the difference between half-duplex and full-duplex transmission modes? (CO-2, BL-3)

b) What is the difference between a port address, a logical address, and a physical address? (CO-5, BL-3)

c) For n devices in a network, what is the number of cable links required for a mesh, ring, bus, and star topology? (CO-1, BL-2)

Q.3-Attempt any one of the following **(1 x 6 = 6 Marks)**

a) Compare and contrast byte-stuffing and bit-stuffing. Which technique is used in byte-oriented protocols? Which technique is used in bit-oriented protocols? (CO-2, BL-4)

OR

b) Explain the various error detection and correction Mechanisms used in computer network. (CO-5, BL-4)

Q.4- Attempt any one of the following. **(1 x 6 = 6 Marks)**

a) What are the responsibilities of the data link layer and network layer? (CO- 2, BL-4)

OR

a) How do the layers of the TCP/IP model correlate to the layers of the OSI model? (CO- 1, BL-4)

Q.5- Attempt any one of the following. **(1 x 6 = 6 Marks)**

a) Describe the need for switching. Compare and contrast a circuit-switched network and a packet-switched network (CO- 2, BL- 4)

OR

b) Name the advantages of optical fiber over twisted-pair and coaxial cable. What is the purpose of cladding in an optical fiber? (CO- 1, BL- 4)

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