

Roll No. _____

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4E1307

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B.Tech. IV - Sem. (Main/Back) Examination, July - 2023
Artificial Intelligence and Data Science
4AID4-07 Data Communication and Computer Networks
CS, IT, AID, CAI

Time : 3 Hours

Maximum Marks : 70

Instructions to Candidates:

Attempt all ten questions from Part A, Attempt any five questions out of Seven questions from Part B and three questions out of Five questions from Part C.

Schematic diagrams must be shown wherever necessary. Any data missing may suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.

Use of following supporting material is permitted during examination. (As Mentioned in form No. 205).

Part - A

(Word limit 25)

All questions are compulsory.

(10×2=20)

1. What is piggybacking?
2. Write use of checksum to find errors in data packet.
3. Differentiate digital and analog signals.
4. What is FTP?
5. Differentiate virtual circuit subnets and datagram subnets.
6. What is jitter?
7. What are the key elements of network protocols?
8. What are cyclic codes?
9. Explain DHCP in brief.
10. Differentiate gateway and routers.

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Part - B

(Word limit 100)

Attempt any five questions

(5×4=20)

1. What is optimality principle? Explain link state routing algorithm.
2. Explain the concept of fragmentation. Why fragmentation is done and how?

3. What is guided transmission media? Explain Coaxial cable.
4. Describe selective repeat ARQ with example.
5. What is DNS? Explain its functioning.
6. Explain the term "Three Way Handshake" in Transport layer connection management.
7. What is silly window syndrome problem? Describe Clark's solution.

Part - C

Attempt any **Three** questions

(3×10=30)

1. Explain OSI network model in detail.
 2. How congestion is controlled at network layer? Explain leaky bucket algorithm.
 3. Explain TCP header format. Differentiate TCP and UDP.
 4. Explain Carrier sense multiple Access protocol (CSMA). Differentiate CSMA and ALOHA.
 5. What is POP3? Explain how it is different from SMTP.
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