

Total number of printed pages:2 Programme(D)/4th Semester/DCSE402

2025

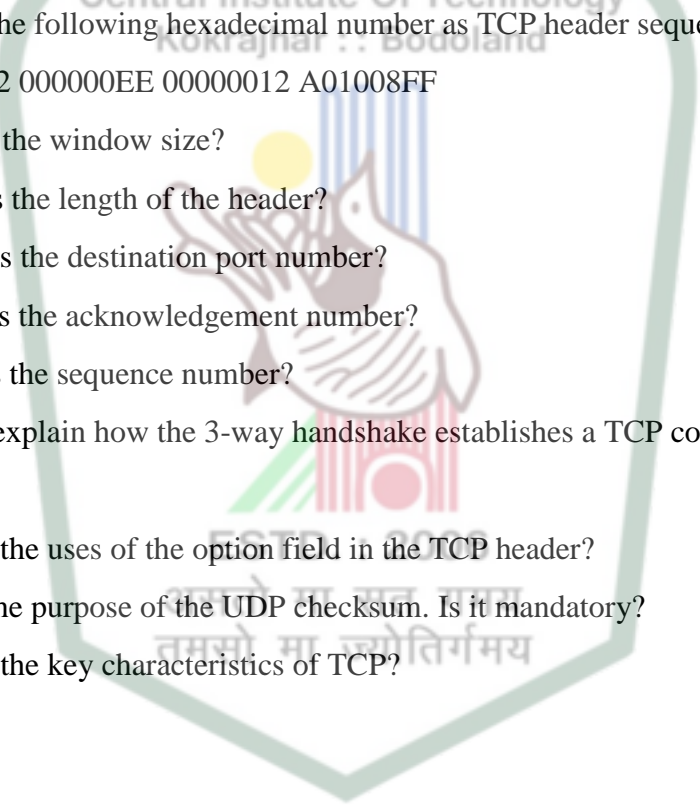
Computer Communication & Networking

Full Marks : 100

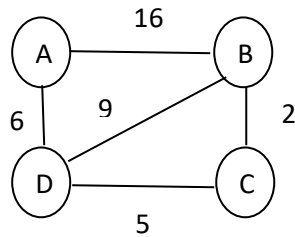
Time : Three hours

The figures in the margin indicate full marks for the questions.

Answer any five questions.

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1. a) Assume the following hexadecimal number as TCP header sequence : 10
D2930022 000000EE 00000012 A01008FF
i)What is the window size?
ii)What is the length of the header?
iii)What is the destination port number?
iv)What is the acknowledgement number?
v)What is the sequence number?
- b) Can you explain how the 3-way handshake establishes a TCP connection? 10
2. a) What are the uses of the option field in the TCP header? 5
b) Explain the purpose of the UDP checksum. Is it mandatory? 5
c) What are the key characteristics of TCP? 10
3. a) What is classful addressing, and what problems are associated with it? 10
b) Suppose you have the network **192.168.100.0/24** and you need **8 subnets**. 10
i) What are the subnet IDs and broadcast addresses for all 8 subnets?
ii) What will be the range of each subnet?

4. How are routing tables updated in the distance vector routing algorithm for the following network? 20



5. a) What are the different versions of access modes in CSMA? Explain their advantages and disadvantages. 10
- b) List and briefly explain the key fields in the IPv4 header that affect packet handling. 10

6. Write short notes on 20

- a) Pure ALOHA
- b) FTP
- c) Packet Switching
- d) Star Topology

