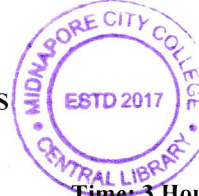


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MCA Semester- II Examination, 2025
MASTER OF COMPUTER APPLICATIONS
PAPER: MCA 203
(COMPUTER NETWORK)



Full Marks: 100

Time: 3 Hours

The figures in the right-hand margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

Group-AAnswer any **FIVE** of the following questions:**2×5=10**

1. Define broadband and baseband in telecommunication.
2. Write down the difference between static and dynamic routing.
3. What is pure and slotted aloha?
4. Define signal attenuation.
5. Define DNS?
6. Write down the steps to create a TCP client.
7. What is UDP? Why it is not connection oriented?
8. What is www?

Group-BAnswer any **FOUR** of the following questions:**15×4=60**

9. (i) Discuss the three-way handshake process used in establishing a connection at the Transport Layer.
(ii) Generate the CRC code for the data word 1011010010 at sender side and verify at receiver side. The generator polynomial is X^3+X+1 . **8+7**
10. (i) Discuss the roles of each layer in the ISO/OSI reference model in brief.
(ii) Write down the differences between IPV4 and IPV6. **10+5**
11. (i) What is multiplexing? Write down the multiplexing techniques for analog signals.
(ii) Write down the difference between Stop and Wait and sliding window protocol.
(iii) What is Multiplexing? Write a short note on TDM. **5+5+5**
12. (i) Differentiate between circuit switched networks and packet switched networks.
(ii) What is Classful Addressing in IPV4? Describe different types of classes in IPV4.
(iii) What is subnetting? Why is subnetting done? **4+8+3**

(P.T.O.)

(2)

13. (a) Assume that a company has class B address 172.16.0.0. and wants to divide the network into 300 sub networks. Answer the following question:
- (i) What will be new subnet mask?
 - (ii) What will be address of 9th network?
 - (iii) What will be broadcast address of 11th network?
 - (b) What is congestion control? Explain leaky bucket algorithm. 10+5
14. (i) What do you mean by 205.16.37.32/28? Explain.
- (ii) What is guided media? Discuss different types of guided media.
 - (iii) Explain classless inter domain routing (CIDR). 5+5+5
15. (a) An IP datagram of size 2400(including 20 bytes header) is sent over a link with MTU of 1000 bytes. Answer the following questions:
- (i) Find the no. of fragment.
 - (ii) Find the size of each fragment.
 - (iii) Find the offset.
 - (iv) Find the MF bit.
 - (b) Explain CSMA/CD and CSMA/CA. 10+5
16. Write short notes on any three (3):
- (i) Dynamic Host Configuration Protocol (DHCP),
 - (ii) Remote Procedure Call (RPC),
 - (iii) Hidden terminal and Exposed terminal problem,
 - (iv) Port address,
 - (v) Client / Server communication. 5+5+5

(Internal Assessment: 30 Marks)

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