

|                       |                                                                                                                                   |                           |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| 2C8122                | Roll No. _____                                                                                                                    | [Total No. of Pages : 2]  |
|                       | <div style="border: 1px solid black; display: inline-block; padding: 5px 20px; font-weight: bold; font-size: 1.2em;">2C8122</div> |                           |
|                       | <b>M.C.A. II-Sem. (Main/Back) Examination, June/July - 2025</b><br><b>MCA-202 Computer Networks</b>                               |                           |
| <b>Time : 3 Hours</b> |                                                                                                                                   | <b>Maximum Marks : 70</b> |

**Instructions to Candidates:**

**Attempt All Ten questions from Part A. All Five 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 are the main characteristics of data communication?
2. Define protocol and list its key elements.
3. Differentiate between simplex and full-duplex data flow.
4. Compare OSI and TCP/IP models briefly.
5. Name any four types of guided transmission media.
6. What is modulation? Mention any one modulation technique.
7. Define framing in the data link layer.
8. What is CSMA?
9. Write two differences between IPv4 and IPv6.
10. What is a digital signature?

**PART - B**  
(Word limit 100)

**All questions are compulsory.**

**(5×4=20)**

1. Explain the categories of computer networks with suitable examples.
2. Describe any two error detection techniques used in the data link layer.
3. Write a short note on Ethernet and its types.
4. Explain Link State Routing with a suitable diagram.
5. What is DNS? Describe the DNS name space and its structure.

### **PART - C**

**Answer any Three of the following questions.**

**(3 × 10 = 30)**

- 1. Describe the OSI reference model in detail with a labeled diagram**
  - 2. Explain guided and unguided transmission media with suitable examples**
  - 3. Discuss the working of TCP and UDP protocols. Compare their headers**
  - 4. Explain different routing protocols used in the network layer**
  - 5. What is cryptography? Describe encryption and decryption techniques with examples**
-