

**CMR ENGINEERING COLLEGE: : HYDERABAD**  
**UGC AUTONOMOUS**

**III-B.TECH-I-Semester End Examinations (Supply) - December- 2025**  
**COMPUTER NETWORKS**  
**(Common for CSE, CSD, AI&DS)**

**[Time: 3 Hours]**

**[Max. Marks: 70]**

**Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 20 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks.

**PART-A**

**(20 Marks)**

1. a) Define Computer Network. List its applications. [2M]
- b) What is ARPANET? [2M]
- c) List the design issues of Data Link Layer. [2M]
- d) What are the two sublayers of Data link layer? [2M]
- e) Write the functions of network layer. [2M]
- f) Define Congestion. [2M]
- g) List the three types of addresses in TCP/IP. [2M]
- h) What are the advantages of using UDP over TCP? [2M]
- i) What do you mean by TELNET? [2M]
- j) Write the goal of Domain Name System. [2M]

**PART-B**

**(50 Marks)**

2. Explain in detail about TCP/IP Protocol suite with a neat diagram. [10M]

**OR**

3. With neat sketch explain Coaxial cable, Standards of coaxial cable and connectors of coaxial cables. [10M]

4. Describe framing methods in data link layer with an example. [10M]

**OR**

5. With an example explain stop and wait Flow control mechanism for noisy channel. [10M]

6. Illustrate IPv4 datagram format and header fields with suitable diagram. [10M]

**OR**

7. Explain distance-vector-routing algorithm with an example. [10M]

8. With a neat diagram, explain connection establishment, data transfer and connection termination in Transmission Control Protocol (TCP). [10M]

**OR**

9. Are the TCP Connections are half- duplex? How the Connections will release in TCP? [10M]

10. Explain the working of domain name system. [10M]

**OR**

11. What is electronic E-mail? Describe in brief about the architecture of email. [10M]

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