

Code No.: EC701PC

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H.T.No.

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CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS

IV–B.TECH–I–Semester End Examinations (Supply) - December- 2025

DATA COMMUNICATIONS AND NETWORKS

(ECE)

[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 and may have a, b, c as sub questions.

PART-A

(20 Marks)

1. a) List the OSI Model Layers. [2M]
- b) Explain the network characteristics. [2M]
- c) Explain the services provided by the Link Layer. [2M]
- d) List out the data link layer protocols. [2M]
- e) Explain the difference between routing and forwarding. [2M]
- f) Explain the switching. [2M]
- g) List out the Transport layer protocols. [2M]
- h) Why did we need to introduce sequence numbers? [2M]
- i) Define the HTTP protocol. [2M]
- j) Define SNMP protocol. [2M]

PART-B

(50 Marks)

2. With a neat diagram explain the OSI reference model in detail? Explain the functions performed in each layer [10M]
- OR**
3. Explain the IEEE 802.11 Architecture [10M]
4. Explain the HDLC protocol [10M]
- OR**
5. Explain the ALOHA protocol [10M]
6. Explain about forwarding and Addressing in the Internet ? [10M]
- OR**
7. Define Routing and Explain the architecture of router with a neat diagram. Give some examples of routing algorithms. [10M]
8. Discuss transport-layer Multiplexing and Demultiplexing process. [10M]
- OR**
9. a. Compare UDP and TCP protocol [5M]
b. Explain the basic principle of reliable data transfer [5M]
10. What is an Electronic mail? Explain the two scenarios of architecture of E-Mail [10M]
- OR**
11. What is the use of DNS? Explain how it works? [10M]
