

CLUSTER UNIVERSITY :: KURNOOL

UG SECOND YEAR IV SEMESTER END EXAMINATIONS, APRIL 2026

Programme : B.Sc.

Subject : Computer Science

Course Title : Data Communications and Computer Networks

Time : 3 Hours

Max Marks : 70 M

SECTION -A

Answer the following any FIVE Each question carrying 4 Marks

5 x 4 M = 20 M

- 1 Define data communication and list its components.
- 2 Write the functions of OSI reference model.
- 3 What is guided transmission media? Give examples. *Open System Interconnect*
- 4 Define error detection and error correction.
- 5 What is Ethernet? Mention its advantages.
- 6 Define routing and routing algorithm.
- 7 What are UDP and TCP? *Transportation control protocol*
- 8 Write short notes on DNS and E-mail services.

*UPP Date Domain name system  
E-mail protocol*SECTION -B

Answer the following questions Each question carrying 10 Marks

5 x 10 M = 50 M

- 9 a) Explain the OSI reference model and its layers.  
OR  
b) Explain network hardware and network software with examples.
- 10 a) Explain the Data Link Layer and its functions.  
OR  
b) Explain sliding window protocols and HDLC protocol.
- 11 a) Explain the Network Layer design issues and routing algorithms.  
OR  
b) Explain IPv4 and IPv6 addressing formats and their differences.
- 12 a) Explain the Transport Layer services and elements of transport protocol.  
OR  
b) Explain TCP and UDP protocols and compare their features.
- 13 a) Explain Domain Name System (DNS) and World Wide Web architecture.  
OR  
b) Explain the following application layer protocols:  
i) FTP      ii) SMTP