

April 2025

Time – Three hours
(Maximum Marks: 100)

[N.B. Answer all the questions, choosing any two subdivision from each question. Each subdivision carries 10 marks.]

1.
 - (a) Explain the components of a data communication system with a neat diagram.
 - (b) Explain any three network topologies with necessary diagrams.
 - (c) Discuss about LAN, MAN and WAN with their characteristics.
 - (d) Write notes on switches and bridges in networking.
2.
 - (a) Draw the OSI model and explain the functions of any two layers.
 - (b) Explain about TCP/IP protocol suite.
 - (c) Discuss about token ring with suitable diagram.
 - (d) Write in detail about fast Ethernet and gigabit ethernet.
3.
 - (a) Write the concepts behind ARP and RARP protocol.
 - (b) Write in detail about TCP segment format with a neat sketch.
 - (c) Explain about subnetting and supernetting.
 - (d) Write a note on HTTP.

4. (a) Why do we need network security? List and explain the principles of network security.
 - (b) Write about the types of attacks in network security.
 - (c) Define Encryption. Write about symmetric encryption principles.
 - (d) Explain the steps in RSA algorithm.
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5. (a) Write about viruses, worms and trojan horses.
 - (b) Explain about the types of firewalls in network security.
 - (c) List and explain about the types of intruders.
 - (d) Write notes on Honeypots and SPAM.
