

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

MCA (Two Years) S2 (R,S) Degree Examination May 2025

Course Code: 20MCA104

Course Name: ADVANCED COMPUTER NETWORKS

Max. Marks: 60

Duration: 3 Hours

PART A*Answer all questions, each carries 3 marks.*

Marks

- | | | |
|----|---|-----|
| 1 | What is a Computer Network? Explain different categories of network. | (3) |
| 2 | Explain the advantages of persistent communication of HTTP over non-persistent communication. | (3) |
| 3 | Explain Multiplexing and De-multiplexing in transport layer. | (3) |
| 4 | Explain the UDP segment format. | (3) |
| 5 | Explain the forwarding and routing functions in network layer. | (3) |
| 6 | Differentiate virtual circuit and datagram networks. | (3) |
| 7 | Explain the working of CSMA/CD algorithm. | (3) |
| 8 | Explain the difference between Manchester and Differential Manchester encoding with example. | (3) |
| 9 | Write a short note on VPN. | (3) |
| 10 | Explain IEEE 802.11 architecture for wireless LAN. | (3) |

PART B*Answer any one question from each module. Each question carries 6 marks.***Module I**

- | | | |
|----|---|-----|
| 11 | Explain leaky bucket traffic shaping technique to improve QoS of the network. Give necessary figures to explain it. | (6) |
|----|---|-----|

OR

- | | | |
|----|--|-----|
| 12 | Explain the OSI model and briefly explain the functions of each layer. | (6) |
|----|--|-----|

Module II

- 13 Explain Stop-and-Wait and Go-Back-N protocol used in transport layer with necessary diagrams. (6)

OR

- 14 Explain the TCP segment format (structure) in detail. (6)

Module III

- 15 Explain Distance-Vector routing algorithm with an example. (6)

OR

- 16 Explain IPv6 Datagram Format in detail (6)

Module IV

- 17 Explain in detail the various transmission media used for telecommunications. (6)

OR

- 18 What are the various services provided by the link layer protocols? (6)

Module V

- 19 What is a firewall? Explain the categories of firewalls. (6)

OR

- 20 Explain in detail the various security goals, attacks and threats. (6)
