

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) |
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**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)

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