

22685

12425

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Figures to the right indicate full marks.
 - (3) Assume suitable data, if necessary.

Marks

1. Attempt any FIVE of the following :

5 × 2 = 10

- (a) List four network control devices.
- (b) State two advantages of co-axial cable.
- (c) State advantages of LDAP over SSL.
- (d) Define firewall and its types.
- (e) State issues of Network layer.
- (f) State need of windows server.
- (g) State advantages of computer network.

2. Attempt any FOUR of the following :

4 × 3 = 12

- (a) Compare IPv4 and IPv6 on the basis of
 - (i) Address length
 - (ii) Packet size
 - (iii) IP security
- (b) Explain the working of Gateway with neat diagram.



- (c) Distinguish between LAN and WAN.
- (d) Compare between VPN and VLAN on the basis of :
 - (i) Service
 - (ii) Channel
 - (iii) Security and efficiency
- (e) State and explain SNMP. protocols.

3. Attempt any FOUR of the following :

4 × 3 = 12

- (a) Draw neat sketch of OSI model. State two functions of (i) Physical layer & (ii) Data link layer.
- (b) Explain 802.11 architecture.
- (c) State and explain functions of network layer. (Any three)
- (d) Write advantages and disadvantages of Virtual Private Network (VPN) technology.
- (e) State and explain key principles of Network security.

4. Attempt any THREE of the following :

3 × 4 = 12

- (a) Compare distance vector routing and link state routing on the basis of
 - (i) Convergence (ii) Protocol (iii) Loops (iv) Configuration.
- (b) Identify the layer at which the following devices function :
 - (i) Hub
 - (ii) Layer 2 Switch
 - (iii) Router
 - (iv) Repeater
- (c) Draw and explain block diagram of Virtual Local Area Network (VLAN).

- (d) Give class and subnet address for following IP address :
 - (i) 191.168.0.1
 - (ii) 221.45.14.68
 - (iii) 245.32.14.24
 - (iv) 10.145.14.68
- (e) State and explain latest features of Windows Server 2022.

5. Attempt any TWO of the following :

2 × 6 = 12

- (a) With suitable diagram explain following topologies :
 - (i) Bus Topology
 - (ii) Ring Topology
- (b) Give the features and benefits of OSPF including its scalability and support for variable-length subnet masking.
- (c) Explain the concept of private IP address and their use in internal network, along with the Network Address Translation (NAT) technique for mapping private address to public address.

6. Attempt any TWO of the following :

12

- (a) Explain IPv4 packet format in detail.
 - (b) Draw and explain 802.16 architecture.
 - (c) Define Inter domain and Intra domain. Explain any one Intra domain routing protocol.
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