

(2½ Hours)

[Total Marks: 75]



- N. B.: (1) **All** questions are **compulsory**.
 (2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
 (3) Answers to the **same question** must be **written together**.
 (4) Numbers to the **right** indicate **marks**.
 (5) Draw **neat labeled diagrams** wherever **necessary**.
 (6) Use of **Non-programmable** calculators is **allowed**.

1. **Attempt any three of the following:** 15
 - a. Explain in detail Architectures for the enterprise.
 - b. Discuss the PPDIIO phases in detail.
 - c. Explain different layers of hierarchical Network design.
 - d. What are different redundancy techniques ? Discuss in detail.
 - e. Explain HSRP, VRRP and GLBP
 - f. Explain in details different Network Audit Tools.

2. **Attempt any three of the following:** 15
 - a. Compare and Contrast between Switches, Routers and Layer 3 switches
 - b. What are data center foundation components?
 - c. What are different types of Virtualization?
 - d. Explain Spanning Tree Protocol.
 - e. What is Campus LAN Design? What are the Best Practices for the same?
 - f. Discuss different strategies for Load Balancing in the Data Center.

3. **Attempt any three of the following:** 15
 - a. Write a short note on different WLAN Standards.
 - b. Explain in detail WLAN Controller Components.
 - c. Write Short notes on i) Frame Relay ii) Metro Ethernet
 - d. Discuss WAN and Edge Design Methodologies
 - e. What are the different methodologies for Optimizing Bandwidth Using QoS? Explain.
 - f. Explain various DMZ Connectivity implementation techniques.

4. **Attempt any three of the following:** 15
 - a. Explain IPV4 Header structure.
 - b. Write short notes on i) BOOTP ii) DHCP
 - c. Explain IPV6 Unicast Address, Anycast Address and Multicast Address
 - d. Discuss IPV6 Address-Assignment Strategies.
 - e. What are the techniques for IPv4-to-IPv6 Transition Mechanisms?
 - f. What are Routing Protocol Metrics and Loop Prevention techniques?

5. **Attempt any three of the following:** 15
 - a. What are different Network security threats?
 - b. Explain Security Risks.
 - c. Write short note on Risk assessment.
 - d. Write short notes on i) RMON ii) NetFlow
 - e. What are the techniques for Detecting and Mitigating Threats?
 - f. Compare and contrast IPS and IDS .