

(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

- Explain three D's of security.
- Explain the statement that "Achieving 100 percent protection against all conceivable attacks is an impossible job".
- Write a note on Threat Vector.
- What are Application layer attacks? Explain following Application layer attacks:
 - Buffer overflows
 - Password cracking
- Explain the Onion Model.
- List and explain the steps to create a Security Defense Plan.

2 Attempt any three of the following:

15

- Explain certificate-based authentication in detail.
- Write a note on Role-based Authorization (RBAC).
- Write a note on symmetric key cryptography.
- Explain any two confidentiality risks.
- Write a note on object-level security.
- Explain different types of database backups.

3 Attempt any three of the following:

15

- Write a note on outbound filtering.
- Explain the role of hubs and switches in network.
- Explain in detail Network Address Translation (NAT).
- Explain strengths and weaknesses of a firewall.
- Explain the importance of antenna choice and positioning.
- Explain any two types of wireless attacks.

4 Attempt any three of the following:

15

- Explain network-based intrusion detection system in detail.
- List and explain steps to a successful IPS Deployment plan.
- Write a note on H.323 protocol that includes:
 - Governing Standard
 - Purpose
 - Function
 - Known Compromises and Vulnerabilities
 - Recommendations

[TURN OVER]

- d What is Private Branch Exchange (PBX)? How will you secure PBX?
- e Write a note on Access Control List (ACL).
- f Explain the reference monitor concept and windows security reference monitor.

5 Attempt any three of the following:

15

- a Explain how to protect the Guest OS, Virtual Storage and Virtual Networks in Virtual machines.
- b State and explain types of cloud services.
- c Explain various Application Security Practices.
- d Write a note Custom Remote Administration.
- e Explain the classification of Corporate physical Assets.
- f Explain Locks and Entry Controls that should be considered while securing assets with physical security devices.

