

- N. B.: (1) Question **No. 1** is **compulsory**.
 (2) Attempt **any four** from Question Nos. **2 to 7**.
 (3) **Make** suitable **assumptions** wherever necessary and **state** the **assumptions** made.
 (4) **Answers** to the **same question** must be written **together**.
 (5) **Numbers** to the **right indicate marks**.
 (6) **Draw** neat **labelled diagrams** wherever **necessary**.

- Q1. Write short notes on the following: 20
 a) Logic bombs.
 b) "Digging for worms".
 c) Filtering services for DNS.
 d) PKC (Public Key Cryptography).
- Q2. a) Explain the principles of security. 8
 b) Explain Denial of Service attack? What are the variations of the DOS attack? Explain. 6
 c) Describe the life-cycle of a virus. 6
- Q3. a) Explain any of the symmetric cryptosystems algorithms in detail. 8
 b) Can the firewall store the dynamic state entries? If yes, what firewall does support the same? Explain the characteristics of the same. 6
 c) What is protocol failure? Explain the loophole you identified in the protocols such as TCP/IP and SSH. 6
- Q4. a) What are worms? How they spread onto your system? What are the different types of worms? Explain the ways to eradicate them. 8
 b) Explain the different types of firewall configuration. 6
 c) Explain the steps in implementing digital signature for your organization. 6
- Q5. a) Explain substitution and transposition cipher techniques in detail. 8
 b) Explain the characteristics, advantages and limitations of the firewall. 6
 c) What is Trojan Horse Program? How they affect computer programs? Explain its types. 6
- Q6. a) Explain any of the message digest algorithms. 8
 b) What are the commonly used methods for "Authentication of users"? How is the authentication failure observed in this? 6
 c) What is security policy? Explain them in detail. 6
- Q7. a) Compare digital signature and digital envelop. 5
 b) Compare and contrast symmetric and asymmetric cryptography. 5
 c) Compare active and passive attack. 5
 d) Compare distributed and traditional firewall. 5