

22620

23124

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
  - (2) Answer each next main Question on a new page.
  - (3) Illustrate your answers with neat sketches wherever necessary.
  - (4) Figures to the right indicate full marks.
  - (5) Assume suitable data, if necessary.
  - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

1. Attempt any FIVE of the following :

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- (a) List any four virus categories.
- (b) List any four biometric mechanisms.
- (c) Define the following terms :
  - (i) Cryptography
  - (ii) Cryptanalysis
- (d) Give examples of Active & Passive Attacks (two each).
- (e) State the two types of firewall with its use.
- (f) List two protocols in IP Sec. State its function.
- (g) Classify the following cyber crime :
  - (i) Cyber terrorism against a government organization
  - (ii) Cyber – Stalking
  - (iii) Copyright infringement
  - (iv) Email harassment



- 2. Attempt any THREE of the following : 12**
- (a) Explain basic principles of information security.
  - (b) Explain any two password attacks.
  - (c) Describe digital signature technique using message digest.
  - (d) Explain steganography technique with an example.
- 3. Attempt any THREE of the following : 12**
- (a) Describe :
    - (i) Piggybacking
    - (ii) Dumpster diving
  - (b) Consider plain text “CERTIFICATE” and convert it into cipher text using Caesar Cipher with a shift of position 4. Write steps for encryption.
  - (c) State the use of packet filters. Explain its operation.
  - (d) State the features of (i) DAC (ii) MAC.
- 4. Attempt any THREE of the following : 12**
- (a) Convert the given plain text into cipher text using simple columnar technique using the following data :
    - Plain text : NETWORK SECURITY
    - Number columns : 06
    - Encryption key : 632514
  - (b) State the working principle of application gateways. Describe circuit gateway operation.
  - (c) Describe DMZ with an example.
  - (d) State the use of Digital Certificates. Describe the steps for digital certificate creation.
  - (e) Considering DES, find the output of the initial permutation box when the input is given in hexadecimal as, 0x0000 0080 0000 0002

**5. Attempt any TWO of the following : 12**

- (a) State the criteria for information classification. Explain information classification.
- (b) State the features of the following IDS :
  - (i) Network based IDS
  - (ii) Host based IDS
  - (iii) Honey pots
- (c) Explain step-by-step procedure of Kerberos with diagrams.

**6. Attempt any TWO of the following : 12**

- (a) Explain the following attacks using an example :
    - (i) Sniffing (ii) Spoofing (iii) Phishing
  - (b) Describe ITIL framework with different stages of life cycle.
  - (c) State and explain 3 types of firewall configurations with a neat diagram.
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