21819

3 Hours / 100 Marks   Seat No. ☐☐☐☐☐☐☐☐

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)   Use of Non-programmable Electronic Pocket Calculator is permissible.

(7)   Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1.   **(A)   Attempt any THREE of the following :**   **12**

(a)   Describe Bell-LaPadula model of confidentiality.

(b)   How cyber crimes are investigated ?

(c)   State pillars of information security. Describe with neat diagram.

(d)   Define the following terms :

(i)   Plain text

(ii)   Cipher text

(iii)   Cryptography

(iv)   Cryptanalysis

(B) **Attempt any ONE of the following :** 6

(a) What is data recovery ? How deleted files can be recovered ?

(b) Differentiate between symmetric and asymmetric key cryptography.

2. **Attempt any TWO of the following :** 16

(a) Describe any eight protection mechanisms in 'Trusted Computing Base'.

(b) Describe levels of information classification and explain any three criteria for classification of information.

(c) Describe 'IT Act-2000' and 'IT Act-2008'.

3. **Attempt any FOUR of the following :** 16

(a) Describe 'COBIT' framework.

(b) Explain following with reference to information security :

(i) Security policy

(ii) Standards

(iii) Guidelines

(iv) Procedures

(c) Describe various Physical Access Threats.

(d) Describe any four authentication protocols.

(e) Describe the term "Software Piracy".

4. **(A)** **Attempt any THREE of the following :** 12

      (a)   Describe BIBA model of integrity.

      (b)   Explain the following terms :

          (i)   Authorization

          (ii)   Authentication

      (c)   What is Kerberos ? How it works ?

      (d)   Consider plain text "INFORMATION" and convert given plain text into cipher text using 'Caesar Cipher' with shift of position three-write down steps in encryption.

  (B) **Attempt any ONE of the following :** 6

      (a)   Define security. Describe different types of securities in organizations.

      (b)   Explain working of biometric system with neat sketch.

5. **Attempt any TWO of the following :** 16

    (a)   What is trusted computer security evaluation criteria ? Explain various divisions used in TCSEC.

    (b)   Explain 'play fair cipher' encryption process with respect to following terms :

        (i)   Preparing plain text and key matrix

        (ii)   Encryption process with operation rules.

    (c)   List any six data recovery tools. Explain 'Data Recovery Procedure'.

6. **Attempt any FOUR of the following :** 16

    (a) Explain the concepts of system security assurance.

    (b) Describe the working of digital signature with neat diagram.

    (c) What is steganography ? List terminologies used in steganography.

    (d) Explain the importance of "Intellectual Property" rights in cyber crime.

    (e) Explain "Virtual Private Network" with neat diagram.

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