BT-8/D-22                    **48249**

# CYBER SECURITY
Paper–OE–CS–402A

Time : Three Hours]                    [Maximum Marks : 75

**Note :** Students will be required to attempt any *five* questions in all. Each question carry equal marks.

## UNIT- I

1.  (a)  "Cyber criminals are everywhere". Discuss nature and scope of cyber-crimes. What crime comes under cyber-crime against individuals?

    (b)  What is cyber extortion? Briefly discuss sophisticated cyber extortion techniques. Write best practices to reduce the risk of cyber extortion.          (7+8=15)

2.  (a)  What is block cipher and its design principles? Discuss several operations of block cipher along with their advantages and disadvantages.

    (b)  Explore the strength of Data Encryption Standards (DES). Why Advanced Encryption Standard (AES) has replaced DES, 3DES and TDEA?          (7+8=15)

## UNIT- II

3.  (a)  Describe the steps in finding the message digest using SHA-512 algorithm. Explain the compression of Secure Hash Algorithm.

    (b)  Write about Digital Signautre Standards (DSS). Discuss proof of digital signatue algorithm.        (7+8=15)

4.  (a)  Explain the authentication procedures defined by X.509 certificate. Illustrate the concept of 'certificate chain' for verification of digital signature on X.509 certificate.

    (b)  Write a note on PGP and S/MIME.        (7+8=15)

## UNIT-III

5.  (a)  What is the relation between security mechanisms and attacks? Discuss data security considerations.

    (b)  Explain about network-based Intrusion detection system.        (7+8=15)

6.  (a)  Differentiate between SSL and TSL. How do you know that a website is protected by TSL?

    (b)  Differentiate between virus, malware, worm, phishing and spyware and their threats to web security.

                                                        (7+8=15)

## UNIT-IV

7.  Outline and explain digital forensic life cycle. Write about forensic hardware and software. Explain the forensics tools used for e-mail investigation?        (15)

8. (a) Why do we need cyber laws? Discuss the legal perspective of cyber-crime and cyber security scenario in India.

(b) Write note on the followings :

(i) Digital signatures and the Indian IT act.

(ii) Architecture of IP Security. (7+8=15)

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