

Sample Question Paper:
Maharashtra State Board of Technical Education
Scheme – I

Programme Name: Computer/Information Technology Engineering

Programme code: CO/IF

Semester: VI

Course Title: Network and Information Security

Marks : 70

22620

Time: 3 Hrs.

Instructions:

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data if necessary.
- (5) Preferably, write the answers in sequential order.

Q.1) Attempt any FIVE of the following.

(10 Marks)

- a) List any four basic for security.
- b) List any four features of DAC.
- c) Define following terms
 - i) Cryptography
 - ii) Cryptology
- d) Classify following Cybercrime
 - i) Cyber terrorism against a government organization
 - ii) Cyber-stalking
 - iii) Copyright Infringement
 - iv) Email harassment
- e) Give example of Active and Passive attack (Two Each).
- f) State of needs of Firewalls.
- g) Define AS, TGS with respect to Kerberos.

Q.2) Attempt any THREE of the following.

(12 Marks)

- a) Explain criteria's for information classification.
- b) Define following terms.
 - i) Authentication
 - ii) Authorization
- c) Differentiate between symmetric and asymmetric key cryptography.
- d) Explain stenography technique with suitable diagram.

Q.3) Attempt any THREE of the following.

(12 Marks)

- a) Describe the working of biometric system with neat sketch.
- b) 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.
- c) Demonstrate the advantages of setting up a DMZ with two firewalls.
- d) Describe the dumpster diving with its prevention mechanism.

Q.4) Attempt any THREE of the following.

(12 Marks)

- a) Convert the given plain text into cipher text using single columnar technique using following data
 - Plain Text: INFORMATION SECURITY
 - Number of Columns: 06
 - Encryption Key: 326154
- b) State difference between Firewall and Intrusion Detection System?
- c) Describe the host-based intrusion detection system with suitable diagram.
- d) Explain working principle of SMTP.
- e) Find the output of the initial permutation box when the input is given in hexadecimal as: 0x0002 0000 0000 0001

Q.5) Attempt any TWO of the following.

(12 Marks)

- a) Explain the terms:
 - i) Vulnerability
 - ii) Threats
 - iii) Risks
- b) Describe the following
 - i) Network based IDS
 - ii) Packet Filter Firewall
- c) Describe COBIT framework with neat sketch.

Q.6) Attempt any TWO of the following.

(12 Marks)

- a) List Need and Importance of Information? State the Information Classification.
 - b) Describe following terms of intellectual property :
 - i) Copyright
 - ii) Patent
 - iii) Trademark
 - c) Describe the DMZ with suitable example.
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