

P1336

[3864]-416

**B.E. (Information Technology)**  
**INFORMATION SYSTEMS SECURITY**  
**(Revised 2003 Course) (414441) (Sem. - VII)**

*Time : 3 Hours]*

*[Max. Marks : 100*

*Instructions to the candidates:*

- 1) *Answers to the two sections should be written in separate books.*
- 2) *Answer Q1 or Q2, Q3 or Q4, Q5 or Q6 in Section-I and Q7 or Q8, Q9 or Q10, Q11 or Q12 in Section-II.*
- 3) *Figures to the right indicate full marks.*

**SECTION - I**

**Q1) a) Categories Attacks, Defense and Security services. [10]**

b) Among the Security goals such as Integrity, Secrecy, Authentication, Access Control, Non Repudiation, Availability, Identify and state which Security Goal(s) are affected. [8]

- 1) Stock broker receives request from his client to buy shares of ABC Ltd, He buys the shares but looking at benefit he him self keeps the shares and tells the client, he could not help him.
- 2) Revati, Renuka and Meghmala entered into Company Premises. Revati was supposed to visit only sales department. Renuka was supposed to visit only Sales and Marketing departments. Meghmala was supposed to visit Production and Purchase department of the company. But each of them could visit all the departments.
- 3) Rekha is downloading trial accounting software from a well known Web site. But Mr. trudy implanted some malicious code inside the software before the software was delivered to the Rekha. After that, Rekha could not install it on her computer because key was not available for installation.
- 4) Ms. Basanti helped the police officer to find Mr. Gabber. She was not aware that police officer was a fake police officer.

OR

- Q2) a) State in one line 4 physical controls and 4 software control for security purpose. [10]  
b) You are a Security Manager to define policies. Write security policies for Email, Internet Surfing, Password and social conduct. (2 policies for each) [8]
- Q3) a) State and Illustrate Biba Integrity Model. [8]  
b) Illustrate necessity of Trust for end to end security of a business system. [8]

OR

- Q4) a) Explain the Design and implementation details of Access controls. Give simple case. [8]  
b) Compare Chinese Wall Model and Bell-Lapadula Model. [8]
- Q5) a) List and State four important key managements issues. [8]  
b) Write steps of RSA algorithm. (Key Generation, Encryption, Decryption) [8]

OR

- Q6) a) List and State 8 fields used for public key certificate X509. [8]  
b) Does IPSEC support all the goals such as Integrity, Availability, Secrecy, Non Repudiation, Authentication, Reliability, Scalability? Identify and justify. [8]

## SECTION - II

- Q7) a) Consider an Example of Secure communication of large message file between CID officer 1 to CID office 2 with integrity and Authentication, Non repudiation in mind. Show how to use hybrid cryptography model including Symmetric Key, Public Key and Hash Algorithms to achieve this. Draw diagram. [10]  
b) State two appealing advantages and Disadvantages of Symmetric key systems. Also list State the four Commercially used Symmetric Key algorithms. [8]

OR

- Q8)** a) Which OSI layers are responsible to loose Location Privacy and Spoofing. Name the Layers and Why it is so? [10]  
b) List and state eight principles used to design Symmetric Cryptography Algorithm. [8]
- Q9)** a) List and state (one line) 8 design guidelines or security system principles. [8]  
b) Illustrate concept of Identity. What is it, in case of Human being, Computers, Software? Elements, Physical controls, Networking Devices, Servers in the context of Security. [8]

OR

- Q10)** Write short notes on.  
a) Capabilities and Implementation of capabilities. [8]  
b) Software Tools for Security. [8]
- Q11)** a) Write short note on Security Audit standard. [8]  
b) Discuss in detail penetration studies. [8]

OR

- Q12)** a) With a neat diagram explain the architecture of Intrusion detection system. (host based and Network based) [8]  
b) List Firewall characteristics, Firewall types and State the Disadvantages of Firewall. [8]

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