

25/12/11

VIII / old / IT

Elective - II Information Security

28 : 2nd half. 12-shilpa(e)

Con. 9961-12.

(OLD COURSE)

KR-7137

(3 Hours)

[Total Marks : 100

N.B. : (1) Question No. 1 is **compulsory**.

(2) Attempt any **four** questions from remaining **six** questions.

1. (a) What are the primary advantages of SSL over IP Sec ? What are the primary advantages of IP Sec over SSL ? 5
- (b) What is a validation error, and how can such an error lead to a security flaw ? 5
- (c) What is the distinction between a polymorphic and a metamorphic worm ? How might metamorphic software be used for good instead of evil ? 5
- (d) What is a race condition ? Discuss an example of a race condition ? 5
2. (a) List major security threats dealt with each level of TCP/IP protocol stack. 10
- (b) What are the possible attacks on passwords ? 5
- (c) Distinguish between vulnerability, threat and control. 5
3. (a) What is an inference problem in Database ? Discuss with an example. 10
- (b) What is Access Control ? How is it different from Availability ? 5
- (c) Explain the relationship between confidentiality, integrity and availability. 5
4. (a) Explain what is spoofing ? Write about different types of spoofing techniques. 10
- (b) Explain the working of Kerberos. 10
5. (a) Explain a firewall, its types and its limitations. 10
- (b) What is the difference between Digital Certificate and Digital Signature ? 5
- (c) Explain Man-in-the-middle (MIM) attack and how SSL prevents MIM attack. 5
6. (a) Compare the different separation methods used as a basis for protection in OS. State their uses and disadvantages. 10
- (b) Explain denial of service attacks. 10
7. Write short notes on :- 20
- (a) PKI
- (b) RBAC
- (c) PGP
- (d) IPSEC.

- N.B. :** (1) Question No. **1** is **compulsory**.
 (2) Attempt any **four** out of remaining **six** questions.
 (3) Assume suitable **data** wherever **required**.

1. (a) Explain major steps in ETL process with a suitable diagram and an example. 10
 (b) Explain association rule mining. Explain apriori algorithm with its advantages. 10
2. (a) Explain web enabled data warehouse and its major concerns for security. 10
 (b) Explain data mining as a step in KDD. Give the architecture of typical data mining system. 10
3. (a) How are the top-down and bottom-up approaches for building data warehouse differ? Discuss the merits and limitation of each approach. Also discuss the practical approach. 10
 (b) Explain web mining. Explain web content mining with reference to crawlers, Harvest system, virtual web view and personalization. 10
4. (a) State key issue to be considered while planning for data warehouse. Explain any four of them. 10
 (b) Define classification. Explain k-nearest neighbour classification algorithm. 10
5. (a) Differentiate between star schema and snowflake schema and fact constellation. 10
 (b) What are techniques and applications of data mining? 10
6. (a) Describe different clustering algorithms. Discuss advantages and disadvantages of each. 10
 (b) What is the importance of metadata in a data warehouse? What are different types of metadata stored in data warehouse. 10
7. Write short notes on any **two** of the following :— 20
 - (a) Temporal Mining
 - (b) DMQL
 - (c) Comparison between OLAP and OLTP
 - (d) Spatial Data Mining.