



Total Pages : 3

5333

B.Tech. VIIIth Semester Examination
SECURITY OF INFORMATION SYSTEM
Paper – IT-8002

Time : Three Hours]

[Maximum Marks : 100

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt *five* questions in all, selecting *one* question each from Sections A, B, C and D, and Q. No. 9 of Section E (Compulsory). Use of Non-programmable calculator is allowed.

SECTION-A

1. (a) What do you mean by Crypto-analysis ? Explain it with reference to monoalphabetic ciphers like vigenere tableaux.
(b) How will you define Substitutional ciphers and Transpositional ciphers ? Explain any perfect substitutional cipher in detail.
2. (a) Give characteristics of Good ciphers as well as Shanon characteristics.
(b) Explain Information theoretic tests and Unicity distance.

5333/400/GGG/101

[P.T.O.

SECTION-B

- (a) What do you understand by NP ? Give the characteristics of NP.
- (b) Explain the following arithmetic operations :
Inverses, Primes, Euclidean algo, Fermat's theorem.
- (a) Explain Public key encryption system. Give RSA encryption system in detail.
- (b) What is Digital signature ? Explain any digital signature standard in detail.

SECTION-C

- (a) Explain the types of Public key infrastructure. Give the legal issues, copyrights, patents, operating system and database and program security.
- (b) Explain X.705 structure of digital signature.
- (a) Explain Diffie-Hellman algo.
- (b) Design an attack on DES based on knowledge that plaintext consists of upper case ASCII letters plus space, comma, period, semicolon, carriage return and line feed. Nothing is known about plaintext parity bits.

SECTION-D

Give Biometrics authentication mechanism. Explain access control mechanism and firewalls in detail.

- (a) What do you understand by SET protocol ? Also explain SSL protocol. How are they different from each other ?
- (b) Explain PKC standard with reference to PKCD #7. Give the details of S/MIME.

33/400/GGG/101

2

SECTION-E
(Compulsory)

9. Answer *all* the following in brief :

- (a) What is Encryption ?
 - (b) What is the difference between Ciphertext and Plaintext
 - (c) Define Hash concept.
 - (d) What is MD₄ and MD₅ ?
 - (e) What is the difference between Secret key and Public key ?
 - (f) Name any digital standard with its role.
 - (g) What is PEM ?
 - (h) What is Malicious code ?
 - (i) Give the differences between Direct and Indirect attacks.
 - (j) Give the characteristics i.e., confusion and diffusion of ciphers.
-

5334**B.Tech. VIIIth Semester Examination****DATA WAREHOUSE AND DATA MINING**

Paper – IT-8003

Time : Three Hours]

[Maximum Marks : 100

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt five questions in all, selecting one question each from Sections A, B, C and D, and Q. No. 9 of Section E (Compulsory).

SECTION-A

1. (a) What are the components of a 3-tier Data warehouse architecture ? 15
- (b) How Star schema can structure the data to exploit a decision support query ? 5
2. (a) Describe the responsibilities of a Data warehouse manager. 10
- (b) Explain the steps involved in determining facts from dimensions. 10

5334/400/GGG/102

[P.T.O

SECTION-B

- (a) Describe the steps involved in Data mining when viewed as a process of knowledge discovery. 10
- (b) What are the parameters taken into account during the selection of a data mining tool ? 10
- (a) How data is specified in Cluster analysis ? 10
- (b) Explain characterisation, classification & prediction functionalities of a data mining system. 10

SECTION-C

How Knowledge discovery is performed in a data mining environment using Neural network and Genetic algorithms ? 20

What are the characteristics of a Hierarchical clustering method ? Explain any one hierarchical clustering algorithm that performs clustering of a set of objects. 20

SECTION-D

- (a) Explain the methods used for retrieving information in text databases. 10
- (b) Differentiate Text mining approaches on the basis of input taken in the system. 10

What is the role of Trend analysis and Similarity search in the mining of Time series databases ? 20

SECTION-E

(Compulsory)

9. Write short answers :

- (a) What is a Data cube ?
- (b) List four applications of a Data mining system.
- (c) What are the primitives that must be incorporated in a data mining query language in order to allow user to have flexible interaction with data mining system ?
- (d) What are the constituents of Web mining ?
- (e) How does a Data warehouse differ from Database ?
- (f) Which model is used for querying of multidimensional databases ?
- (g) Name any four data mining techniques.
- (h) What is the base of Fuzzy data mining technique ?
- (i) Differentiate KDD from Data mining.
- (j) Define Spatial databases.

2×10=20
