2013

MCA

5th SEMESTER EXAMINATION

PAPER—504

Full Marks : 100

Time : 3 Hours

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Elective-II

Group—A

(CRYPTOGRAPHY)

Answer *Q. No. 1* and any *three* from the rest.

1. Answer any *two* : $2 \times 2\frac{1}{2}$

   (a) What do you mean by Integrity ?

   (b) What is Cryptography ?

   (c) Define Kerckhoff's principle.

   (d) What do you mean by Non-Repudiation ?

2. Explain four cryptanalysis attacks in brief.   '   10

3. (a) What is Caesar Cipher ? Explain with example.

   (b) Encrypt the message : "Hello World" using Play fair cipher where secret key is a 5×5 matrix of alphabet starting from the top left hand corner.   5+5

4. Explain the process of encryption using DES (Data encryption standard).   10

5. Explain the general procedures of RSA cryptosystem with example.   10

6. (a) What is digital signature ? $2\frac{1}{2}$

   (b) What is message digest ? $2\frac{1}{2}$

   (c) How Non-repudiation can achieve by digital signature, Explain.   5

[*Internal Assessment*]   15

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Group—B

(STEGANOGRAPHY)

Answer *Q. No. 7* and any *three* from the rest.

7. Answer any *two* : $2\times2\frac{1}{2}$

   (a) What is steganography ?

   (b) Differentiate between active and passive steganalyst.

   (c) What is stegogramme ?

(Continued)

(d) Differentiate between steganography and water marking.

8. (a) Explain the Hide and Seek steganographic technique using randaomised approach. 8

(b) What are the disadvantage of this technique ? 2

9. Write the algorithm for encoding and decoding process of the F3 technique of steganography. 10

10. Write an algorithm for encoding and decoding process of the F4 technique. 10

11. Explain different types of attacks under steganalysis.
10

12. Write short note (any *two*) : 5+5

(a) JSteg ;

(b) OCT ;

(c) Blockiness ;

(d) Chi-square Test.

[*Internal Assessment*] 15

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(*Turn Over*)