VI Semester B.C.A. Examination, May 2017
(CBCS) (2016-17 and Onwards)
COMPUTER SCIENCE
BCA-603 : Cryptography and Network Security

Time : 3 Hours

Max. Marks : 100

**Instruction**: Answer all the Sections.

**SECTION – A**

Answer any ten questions. Each question carries two marks : (10×2=20)

1. What is information security ?
2. What is data integrity ?
3. Who is cryptanalyst ?
4. Define symmetric key cryptography.
5. What is FIPS ?
6. What is permutation process in cryptography ?
7. What is co-prime ? Give examples.
8. What is integer factorization ?
10. What is payload ?
11. What is a session ?
12. What is IPSec ?

**SECTION – B**

Answer any five questions. Each question carries five marks : (5×5=25)

13. Explain symmetric key encryption model with a neat diagram.
14. Explain various security mechanisms.
15. Explain Euclid’s algorithm with example.
16. Explain transpositional Cipher with an example.

P.T.O.
17. Explain CBC mode of operation.
18. Explain digital signature process with a neat diagram.
19. Explain PGP services.
20. Compare SSL and TLS protocols.

SECTION – C

Answer any three questions. Each carries fifteen marks: (3×15=45)

21. a) Explain key elements of public key encryption.
    b) Differentiate equality and congruence with examples.

22. a) Draw the block diagram of DES algorithm. Explain briefly.
    b) Write a short note on multiple DES.

23. a) Explain Fermat’s theorem of primality test.
    b) Explain RSA algorithm with one example.

24. a) Write a short note on Whirlpool hash function.
    b) Explain Diffie-Helman key agreement.

25. a) Write a short note on IKE.
    b) Explain the modes of IPSec.

SECTION – D

Answer any one question. Each question carries ten marks: (1×10=10)

26. Explain one round of processing in AES.

27. Explain SHA-512 algorithm with a neat diagram.