US – 646

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 ?
9. Define stream cipher.
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.

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. **8**

    b) Differentiate equality and congruence with examples. **7**

22. a) Draw the block diagram of DES algorithm. Explain briefly. **8**

    b) Write a short note on multiple DES. **7**

23. a) Explain Fermat's theorem of primality test. **7**

    b) Explain RSA algorithm with one example. **8**

24. a) Write a short note on Whirlpool hash function. **7**

    b) Explain Diffie-Helman key agreement. **8**

25. a) Write a short note on IKE. **7**

    b) Explain the modes of IPSec. **8**

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.
