

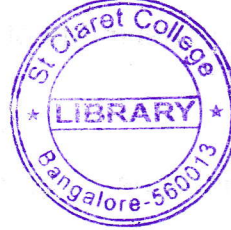


CB – 482

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VI Semester B.C.A. Examination, August/September 2023
(CBCS) (F+R) (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. Define any two network security goals.
2. What is digital signature ?
3. What is a Brute-force attack ?
4. Differentiate between stream cipher and block cipher.
5. List any two properties of cryptographic hash function.
6. What is initialization vector ?
7. Give reasons for certificate revocation.
8. Name the entities involved in a Kerberos authentication process.
9. State the difference between MIME and SMIME.
10. State any two features of SSL architecture.
11. What is security association database ?
12. What are payloads ?

SECTION – B

Answer **any five** questions. **Each** question carries **five** marks.

(5×5=25)

13. Discuss the classification of security goals.
14. Find the GCD (2322, 654) using Euclidean algorithm.
15. Use the additive cipher with key = 10 to encrypt the message "University".

P.T.O.



16. Distinguish between public and private keys in asymmetric key cryptosystem.
17. Explain Fermat's little theorem.
18. Explain the various phases of handshaking process in SSL.
19. Write a note on internet key exchange.
20. Briefly explain Tunnel mode of IPsec.

SECTION – C

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

21. Explain in detail the taxonomy of attacks in relation to security goals. 15
22. a) Explain AES encryption scheme with a schematic structure. 10
b) Discuss any two modes of operation for modern block ciphers. 5
23. a) Explain RSA algorithm including key generation, encryption and decryption process. 10
b) Give the difference between conventional signature and digital signature. 5
24. a) Explain E-mail architecture. 7
b) Write a note on certificate authority. 8
25. a) Explain the main components of a security policy database. 7
b) Differentiate between SSL and TLS. 8

SECTION – D

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

26. Draw the block diagram of DES algorithm and explain. 10
27. Write a note on X.509 certificate. 10