

**GS-644**

VI Semester B.C.A. Examination, May/June - 2019

COMPUTER SCIENCE**BCA 603 : CRYPTOGRAPHY AND NETWORK SECURITY**

(CBCS) (F+R)(2016-17 & Onwards)

Time : 3 Hours

Max. Marks : 100

Instructions : Answer *all* the sections.**SECTION - A**Answer **any ten** questions. Each question carries **two** marks.**10x2=20**

1. Define Cryptography.
2. Distinguish between active and passive attacks.
3. Define Integrity and Non-repudiation.
4. Find the GCD of 16 and 48.
5. Define Padding in block cipher.
6. Define Residue class.
7. Estimate the block size of MD5.
8. Define S/MIME.
9. What is Kerberos ?
10. Define the Diffie - Hellman protocol.
11. List any 2 applications of X.509 certificate.
12. Define Hijacking.

SECTION - BAnswer **any five** questions. Each question carries **five** marks.**5x5=25**

13. Compare steganography and watermarking. **5**
14. State and explain the principles of public key cryptography. **5**
15. With a neat diagram explain the general structure of DES. **5**

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16. Explain Transposition cipher with an example. 5
17. State the important properties of public key encryption scheme. 5
18. Why SHA more secure than MD5 ? 5
19. Briefly explain the architecture of SSL. 5
20. Explain Tunnel mode of IPSec. 5

SECTION - C

Answer **any three** questions. Each question carries **fifteen** marks. **3x15=45**

21. (a) Briefly explain the model of conventional cryptosystem. 8

(b) Find det.A if $A = \begin{bmatrix} 9 & 0 & -2 \\ -3 & -5 & 2 \\ 2 & 0 & 6 \end{bmatrix}$ 7

22. (a) Explain the four stages of AES algorithm. 8
- (b) Explain the rules of play fair cipher with an example. 7
23. (a) Explain the procedure for RSA cryptosystem. 10
- (b) Differentiate between Symmetric and Asymmetric key Cryptography. 5
24. (a) Explain the working of Digital Signature with a neat diagram. 8
- (b) How does PGP provide confidentiality and authentication service for e-mail ? Explain. 7
25. (a) List and explain the four protocols of SSL. 8
- (b) Explain X.509 certificate. 7

SECTION - D

Answer **any one** question. Each question carries **ten** marks. **1x10=10**

26. Discuss in detail block cipher modes of operations. 10
27. List and explain the properties of Hash functions. 10