

Code No.: (R22CY401PC)

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**CMR ENGINEERING COLLEGE: : HYDERABAD  
UGC AUTONOMOUS**

**II–B.TECH–II–Semester End Examinations (Regular) -July- 2024  
CRYPTOGRAPHY AND NETWORK SECURITY**

( CSC )

[Time: 3 Hours]

[Max. Marks: 60]

**Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 10 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

**PART-A**

**(10 Marks)**

1. a) Define decryption. [1M]
- b) Define plain text. [1M]
- c) What is asymmetric key cipher? [1M]
- d) Compare stream cipher and block cipher. [1M]
- e) Explain cryptographic hash function. [1M]
- f) What is key size of SHA-512 [1M]
- g) Define HTTPS. [1M]
- h) What is wireless security? [1M]
- i) Define S/MIME. [1M]
- j) Define authentication header. [1M]

**PART-B**

**(50 Marks)**

2. Illustrate different types of substitution techniques. [10M]
- OR**
- 3.a) Define the terms steganography and cryptography. [5M]
  - b) Explain network security model with neat diagram. [5M]
4. Users A and B use Diffie-Hellman key exchange scheme using prime  $q = 71$  and primitive root  $\alpha=2$ . [10M]  
User A has private key  $X_a = 5$ , what is A's public key  $Y_a$ ?  
User B has private key  $X_b = 12$ , what is B's public key  $Y_b$ ? What is the shared secret key?
- OR**
5. Explain Elgamal cryptography with example. [10M]
  6. Explain any two different approaches for digital signature? [10M]
- OR**
7. Write about HMAC algorithm and its security services. [10M]
  - 8.a) How security is maintained for mobile device? [5M]
  - b) Explain 802.11 wireless LAN architecture. [5M]
- OR**
- 9.a) Explain secure socket layer and define frame format in SSL [5M]
  - b) Explain about transport layer security. [5M]

10. What is Pretty Good Privacy (PGP)? Explain the reasons for compressing the signature before encryption? [10M]

**OR**

11.a) Discuss case study on “cross site scripting vulnerability”. [5M]

b) Discuss case study on Single Sign on (SSO). [5M]

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