**Reg. No. :**

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**Question Paper Code: U9278**

B.E./B.Tech. DEGREE EXAMINATION, NOV 2024

Open Elective

Civil Engineering

21UCS978 - NETWORK SECURITY ESSENTIALS

(Common to All branches)

(Regulations 2021)

Duration: Three hours                                           Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1.  Define confidentiality and authentication?                                    CO1 - U
2.  Why network need security?                                                    CO1 - U
3.  Design the role of Ticket Granting Server in inters realm operations of      CO2-App
    Kerberos?
4.  Decipher the following cipher Text using brute force attack:                 CO2-App
    CMTMROOEOORW (Hint: Algorithm-Rail fence)?
5.  Describe three alternative approaches to providing WAP end-to-end security?  CO1 - U
6   Define IEEE 802.11 services?                                                 CO1 - U
7   How can the signed data entity of S/MIME be prepared? Give the steps         CO1 - U
8   What is R64 conversion?                                                      CO1 - U
9   Difference between an internal and an external firewall?                     CO1 - U
10  What is a circuit-level gateway?                                             CO1 - U

PART – B (5 x 16= 80Marks)

11. (a) How AES is used for encryption/decryption? Discuss with      CO1 - U    (16)
        example?

Or

    (b) Explain Client Server Mutual authentication with example flow   CO1 - U  (16)
        diagram?

12. (a) Design 1113 mod 53 using modular exponentiation              CO2-App    (16)

Or

    (b) Perform encryption and decryption using RSA algorithm for    CO2-App    (16)
        p=17, q=11,e=7 m=88.

13. (a) KAMAL create a "private key" using transport layer security in encryption and decryption. How he can create a private key?    CO2-App    (16)

Or

(b) Develop the process of deriving eighty 64-bit words from 1024 bits for processing Of a single blocks and also discuss single round function in SHA-512 algorithm. Show the values of W16, W17, W18 and W19    CO2-App    (16)

14. (a) Explain the working of electronic mail. Describe how the SMTP is used in e-mail applications?    CO1 - U    (16)

Or

(b) Explain in detail the operation of Secure Socket Layer in detail. ?    CO1 - U    (16)

15. (a) Explain the various measures that may be used for intrusion detection    CO1 - U    (16)

Or

(b) Explain the working principle of SET relate EST for Ecommerce applications    CO1 - U    (16)

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