Roll.No. | 25PCSETCC04

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)
(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai - 600 044.
M.Sc.Computer Science - END SEMESTER EXAMINATIONS - NOVEMBER 2025
SEMESTER - III

25PCSETCC04 -Cryptography and Cyber Security

Total Duration : 2 Hrs. 30 Mins. Total Marks : 60

Section B

Answer any **SIX** questions $(6 \times 5 = 30$ Marks)

1. Explain the structure of Encryption and Decryption algorithms with example.
2. Explain how cybercrime affects information security and describe the role of tools like key loggers and spywares.
3. Design a basic cyber security framework to protect against common cybercrimes including password cracking and SQL injection.
4. Explain in detail about Hash function with relevant example.
5. Break down the structure of the Secure Hash Algorithm (SHA) and explain its significance in cryptographic applications.
6. Briefly define email threats (e.g., phishing, spoofing, and malware via attachments) and Mention the importance of multi-layered security in enterprise environments.
7. Explain the Integration of Security Domains including NAC, Cloud Security, Web Security, Wireless security.
8. To perform encryption and decryption using the RSA algorithm with your own example.

Section C

I - Answer any **TWO** questions $(2 \times 10 = 20$ Marks)

9. Discuss the conventional encryption model in detail, highlighting key security concepts. Explain the mechanisms of substitution and transposition ciphers with examples. Further, compare the DES and AES algorithms in terms of structure, security, and performance.
10. Explain the principles of public key cryptography and describe the working of RSA and Diffie–Hellman key exchange algorithms. Discuss the role of message authentication and hash functions in ensuring data integrity, with emphasis on Secure Hash Algorithm (SHA). Finally, evaluate the significance of digital signatures in modern cybersecurity.

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