CBCS Scheme

USN | | | | | | | | | | |

15CS61

Sixth Semester B.E. Degree Examination, June/July 2018
Cryptography, Network Security and Cyber Law

Time: 3 hrs. Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. List and explain the various types of vulnerabilities with common cyber attacks. **(08 Marks)**

b. Encrypt the plaintext "CRYPTOGRAPHY" using hill cipher technique with key matrix $K = \begin{bmatrix} 9 & 4 \\ 5 & 7 \end{bmatrix}$. **(08 Marks)**

OR

2 a. Distinguish between :
i) Confusion and diffusion ciphers
ii) Block cipher and stream ciphers. **(08 Marks)**

b. With a neat schematic, explain the single round of DES encryption model. **(08 Marks)**

Module-2

3 a. In a RSA system, it is given p = 3, q = 11, ℓ = 7 and M = 5. Find the cipher text 'C' and also find message 'm' from decryption. **(08 Marks)**

b. Define Hash function. Explain the construction of generic cryptographic Hash. **(08 Marks)**

OR

4 a. With a neat sketch, explain the process of computing Hash function using SHA – 1 algorithm. **(08 Marks)**

b. Explain the working of Diffie–Hellman key exchange protocol. **(08 Marks)**

Module-3

5 a. What is digital certificate? Explain the X·509 digital certificate format. **(08 Marks)**

b. Distinguish shared secret–based authentication and Asymmetric key–based authentication **(08 Marks)**

OR

6 a. Assume a client 'C' wants to communicate with server 'S' using Kerberos protocol. How can it be achieved? **(08 Marks)**

b. What is secure socket layer? Explain SSL Handshake protocol. **(08 Marks)**

Module-4

7 a. What is intrusion detection system (IDS)? Explain different types of IDS. **(06 Marks)**
b. Explain how 802.11i provides message confidentiality and integrity. **(06 Marks)**
c. Explain the characteristics of virus and worm. **(04 Marks)**

OR

8 a. What is WS-security? Explain the various types of WS – security. **(06 Marks)**
b. Explain the prevention and detection methods on DDOS attack. **(06 Marks)**
c. List and explain any two technologies used for web services. **(04 Marks)**

Module-5

9 a. List and explain the objectives and scope of IT Act. **(08 Marks)**
b. Explain the process of issuing digital signature certificate and revocation of digital signature certificate by a certifying authority. **(08 Marks)**

OR

10 a. Explain the various offences and punishments on cyber crime. **(08 Marks)**
b. Explain the process of attribution, acknowledgment and dispatch of electronic records. **(08 Marks)**

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