USN ☐☐☐☐☐☐☐☐☐☐ **10EC832**

Eighth Semester B.E. Degree Examination, June/July 2017

Network Security

Time: 3 hrs. Max. Marks:100

Note: *Answer FIVE full questions, selecting*
at least TWO questions from each part.

PART – A

1 a. Define passive and active security attacks. Discuss the functioning of following attacks with diagrams:
   i) Masquerade   ii) Replay
   iii) Modification of messages   iv) Denial of service **(10 Marks)**
   b. With a neat diagram, discuss the functioning of network security model. List four basic tasks of designing security model. **(10 Marks)**

2 a. Encrypt the plain text "HELLO" using the play fair cipher with the key "EXAM". **(08 Marks)**
   b. Explain the operation of Caeser cipher with an algorithm. Derive the cipher text using Caeser Cipher for the following plain text message with key length K = 3, "logic". **(06 Marks)**
   c. Explain the single round of DES-encryption model. **(06 Marks)**

3 a. Explain the RSA algorithm. In a RSA algorithm system it is given that p = 7, q = 11, e = 17 and M = 8. Find the cipher text "c" and decrypt "c" to set plain text M. **(10 Marks)**
   b. Describe the requirements for a Hash function. **(05 Marks)**
   c. Explain Diffie Hellman key exchange algorithm with example. **(05 Marks)**

4 a. With neat diagram, explain digital signature algorithm (DSA). **(10 Marks)**
   b. List and explain the general approach to deal with replay attacks. **(10 Marks)**

PART – B

5 a. Discuss Security Socket Layer (SSL) record protocol in terms of fragmentation, compression and encryption. **(10 Marks)**
   b. Describe the sequence of events that are required for a transaction in Secure Electronic Transaction (SET). **(10 Marks)**

6 a. Briefly describe the three classes of intruder. **(06 Marks)**
   b. Explain approaches to intrusion detection system. **(04 Marks)**
   c. Give a detailed account on UNIX password management. **(10 Marks)**

7 a. Briefly describe the most significant types of virus. **(10 Marks)**
   b. With a neat diagram, explain digital immune system. **(10 Marks)**

8 a. Explain the types of firewalls in detail with necessary sketch. **(09 Marks)**
   b. Explain briefly about the trusted systems. **(06 Marks)**
   c. Briefly discuss the concept of reference monitor with diagram. **(05 Marks)**

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