First Semester M.Tech. Degree Examination, Dec. 2013/Jan. 2014
Information Security

Time: 3 hrs.   Max. Marks:100

Note: *Answer any FIVE full questions.*

1 a. What is security? Explain three components of the CIA triangle. **(10 Marks)**
   b. Briefly explain the NSTISSC model and the security systems development life cycle.
   (10 Marks)

2 a. List and briefly explain the different information security power. **(10 Marks)**
   b. Explain five processing modes of firewall categorization methods. **(10 Marks)**

3 a. Explain in detail, the Network based IDS and Host based IDS. **(06 Marks)**
   b. Define the term Honey pots and Honey nets. **(06 Marks)**
   c. With a neat block diagram, explain the maintenance model. **(08 Marks)**

4 a. With a neat block diagram, explain model for network security and derive the four tasks for
   designing a security services. **(10 Marks)**
   b. Explain the security mechanisms mentioned in x.800 in detail. **(10 Marks)**

5 a. With a neat block diagram, explain any two types of cipher block mode of operations.
   (08 Marks)
   b. Perform encryption and decryption using RSA algorithm for the following p = 17, q = 11,
   e = 7 and M = 88. **(06 Marks)**
   c. Explain the rounds for encrypting plain text using fiestal network. **(06 Marks)**

6 a. With neat illustration, explain advanced encryption standard algorithm (AES). **(06 Marks)**
   b. Explain the Diffie – Hellman key exchange algorithm. **(06 Marks)**
   c. With a suitable block diagram, explain overview of Kerberos and explain steps involved in
   version 4. **(08 Marks)**

7 a. Explain three pretty good privacy (PGP) cryptographic function, with necessary block
   diagram. **(09 Marks)**
   b. Explain the application and benefits of IPSec. **(06 Marks)**
   c. Compare the various threats on the web and their consequences and counter measures.
   (05 Marks)

8   Explain the following terms :
   a. Secure Electronic Transaction (SET)
   b. Software flows
   c. SSL protocol stack
   d. Encapsulating security payload (ESP). **(20 Marks)**

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