No. of Printed Pages : **2**

Sl. No.

B5.3-R4 : NETWORK MANAGEMENT AND INFORMATION SECURITY

NOTE :

1. **Answer question 1 and any FOUR questions from 2 to 7.**
2. **Parts of the same question should be answered together and in the same sequence.**

Time : 3 Hours **Total Marks : 100**

1. (a) What are the objective of information security for an organization ?

(b) What do you understand by risk, vulnerability and threat in network security ?

(c) Describe any two issues related to measuring network performances.

(d) What are the different security measures should be taken against a brute force login attack ?

(e) What do you understand by encryption techniques ?

(f) What are the goal of Network Management ? Discuss network management architecture.

(g) Explain TCP/IP layered architecture with block diagram. **(7x4)**

2. (a) Explain various configuration of network management system.

(b) What is SNMP ? Explain the SNMP model of a managed network with block diagram.

(c) Explain substitution techniques for cryptography.

(d) Explain Electronic Code Block (ECB) and Cipher Block Chaining (CBC) Operation Modes for Block ciphers. **(5+5+4+4)**

3. (a) What's the difference between Diffie-Hellman and RSA techniques ?

(b) Explain the Desktop Management Interface and Architecture.

(c) What is difference between HTTP and HTTPS protocol ?

(d) Explain how do we use RSA for both authentication and secrecy. **(4+5+4+5)**

4. (a) Explain SNMP protocol with packet format.

(b) Explain how do we do authentication with Message Digest (MD5).

(c) What's the difference between encoding, encryption and hashing ?

(d) In public-key cryptography you have a public and a private key and you often perform both encryption and signing functions. Which key is used for which function ? **(4+4+4+6)**

5. (a) Write short note on :

(i) Security Management

(ii) Performance Management

(b) Explain what is difference between ARP and RARP. How both of these protocols will work and where it will use ?

(c) What kind of attack is a standard Diffie-Hellman exchange vulnerable to ?

(d) Explain what are digital signatures. **(3+4+5+6)**

6. (a) What is IP sec protocol ? Explain in details with operation mode and its application.

(b) Briefly describe three modes of operation of DES.

(c) Briefly outline the purpose of PKI. Also explain what is meant by a certificate authority and digital certificate. **(6+6+6)**

7. (a) What are different protocols for e-mail security ? Describe the use of Secure/ Multipurpose Internet Mail Extensions also.

(b) Explain in brief :

(i) Secure Socket Layer

(ii) Transport Layer Security

(iii) Secure Electronic Transaction **(9+9)**

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