

**M.Tech. IN ADVANCED INFORMATION
TECHNOLOGY – NETWORKING AND
TELECOMMUNICATION (MTECHTC)**

Term-End Examination

December, 2014

00269

**MINE-038 : ADVANCED NETWORK MANAGEMENT
AND SECURITY**

Time : 3 hours

Maximum Marks : 100

Note :

- (i) *In Section I, solve any **four** questions.*
- (ii) *In Section II, solve any **four** questions.*
- (iii) *Assume suitable data wherever required.*
- (iv) *Draw suitable sketches wherever required.*
- (v) *Answers of Section I and Section II are to be written in separate answer booklets.*

SECTION I

*Solve any **four** questions from this section :*

1. A multinational company wants to install Networking Monitoring protocol in their Network Operation Centre (NOC). As a Network Consultant, which SNMP version will you recommend ? Justify your answer with proper reasoning.

6+7

2. Explain Active and Passive network monitoring, with the help of suitable examples. 13

3. Explain how PERL can be utilised to extract and report the Network Logs. Explain one scenario in detail. 13

4. (a) List the performance measurement parameters of a network. 4
(b) Explain any one performance measurement parameter of a network in detail. 5
(c) Why is Quality of Service (QoS) important for a Network ? 4

5. Explain how IEEE 802.3ad can solve the server-switch bottleneck problem. 13

SECTION II

Solve any **four** questions from this section :

6. (a) Explain the working of “Caeser Cipher” in brief. 4
- (b) Encrypt the message “A DAY TO LIVE” using Caeser cipher of key length 4. 8
7. Find C1, C2 and C3 for the following equations :
- $C1 = (17A + 17N + 5T) \bmod 26$ 4
- $C2 = (21A + 18N + 21T) \bmod 26$ 4
- $C3 = (2A + 2N + 19T) \bmod 26$ 4
8. (a) Explain the working of “Rail Fence” cipher in brief. Is it a “transposition cipher”? 6
- (b) Encrypt the message : MEET ME AFTER THE FINAL EXAM using Rail Fence/zigzag cipher technique of depth 4, using the key 4312567. 6
9. (a) What is the difference between “Symmetric” and “Asymmetric” cryptography? 2
- (b) What is meant by “Public Key Cryptography”? Illustrate with the help of a suitable diagram. 6
- (c) List two advantages and two limitations of Public Key Cryptography. 4

10. (a) What is meant by “Steganography”? Briefly explain how it works. 6
- (b) Give the details for hiding an information inside a “.bmp” image. 6
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