

**DiplETE – CS (Current Scheme)**

Time: 3 Hours

**DECEMBER 2015**

Max. Marks: 100

**PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.**

**NOTE: There are 9 Questions in all.**

- Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.
- The answer sheet for the Q.1 will be collected by the invigilator after 45 minutes of the commencement of the examination.
- Out of the remaining EIGHT Questions answer any FIVE Questions. Each question carries 16 marks.
- Any required data not explicitly given, may be suitably assumed and stated.

- Q.1 Choose the correct or the best alternative in the following: (2×10)**
- The network traffic monitoring tool *ping* is used to
    - Measure point-to-point bandwidth of a link
    - Measure round-trip packet loss
    - Measure performance of gateways
    - Dump traffic on network
  - Which of the following is **not** a model in the OSI network management model?
    - Organizational model
    - Communication model
    - Structural model
    - Information model
  - The term TCP/IP stands for
    - Transmission Control Protocol/Internet Protocol
    - Transfer Control Protocol/Internet Protocol
    - Transmission Control Protocol/Information Protocol
    - Transmission Communication Protocol/Internet Protocol
  - The central coordinator for the assignment of unique parameter values for Internet protocols is \_\_\_\_\_
    - Internet Numbers Assignee Authority(INAA)
    - International Internet Number Assigning authority(IINAA)
    - Internet Assigned Numbers Authority(IANA)
    - Global Assigned Numbers Authority(GANA)
  - Which of the access privileges can be assigned in an SNMP community profile?
    - Read only, Write only, Read-write, None
    - Read only, Write only, Read-write, Execute
    - Read only, Write only, All, None
    - Read only, Write only, Read-write, Assign
  - The term RMON when expanded is
    - Remote Network Monitoring
    - Remote Network Office Monitoring
    - Remote Network Official Monitoring
    - Reference Network Monitoring

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- g. Which of the following is **not** amongst one of the nine common RMON1 and Ethernet groups?  
 (A) The Host group (B) The Filter group  
 (C) The Matrix group (D) The Alarming group
- h. The layer that controls the data transfer to and from LAN in the OSI model is  
 (A) The Data Link layer (B) The Session layer  
 (C) The Network layer (D) The Transport layer
- i. Network management can be defined as **OAM&P**. The term **OAM&P** stand for  
 (A) Operations, Administration, Maintenance, and Provisioning  
 (B) Operations, Administration, Maintenance, and Proposal  
 (C) Official, Administration, Maintenance, and Provisioning  
 (D) Operations ,Administration, Management, and Provisioning
- j. Which amongst the following is a valid symbol in ASN.I?  
 (A) “ “ (B) ::=   
 (C) || (D) :+

**Answer any FIVE Questions out of EIGHT Questions.  
 Each question carries 16 marks.**

- Q.2** a. Discuss the OSI protocol architecture in detail. List out, at least one salient service provided by each layer (8)
- b. Identify the various network management functions and the groups that perform these functions. Also, explain the interactions among these groups. (8)
- Q.3** a. Compare the two-tier network management organizational model with the three-tier network management organizational model. Illustrate your answers with suitable diagrams (8)
- b. What is ASN.I and why is it required? With the help of a block diagram , outline the ASN.I data type structure and tag (8)
- Q.4** a. Explain, with the help of a block diagram, a Proxy Server Organization model. List and explain the five protocol messages of SNMPv1 which facilitate the communication of management information among management entities (8)
- b. What are the following data types of SNMP ASN.I used for? Also specify the structure of each of the data type.  
 (i) Gauge (ii) Time-ticks  
 (iii) Opaque (iv) SEQUENCE (8)
- Q.5** a. What are protocol entities? How is communication among these protocol entities is accomplished? Show the structure of encapsulated SNMP message.(8)
- b. What is Remote Monitoring? Discuss its advantages. (8)
- Q.6** a. What is a protocol analyzer? Explain the basic configuration used for a protocol analyzer. Use suitable diagram. Name any two popular commercial protocol analyzers. (8)

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- b. Identify the five functional components of a Network management system. List any one service offered by each of these components along with pictorial representation. (8)
- Q.7** a. What is a fault? Explain the various steps in fault management. Name any two methods of fault detection. (8)
- b. Differentiate between secret key cryptography and public key cryptography. (8)
- Q.8** a. What is the function of planning and management reports in report management activity of network management? List the various categories of the planning and management reports with an example from each of the category (8)
- b. What is Service level management? Identify the characteristics associated with services (8)
- Q.9** a. What is Windows Management Instrumentation (WMI)? Explain the WMI architecture in detail, with the help of an example. (8)
- b. What is Embedded Web-based management? What are the benefits of Embedded Web-based management? (8)