

Subject: NETWORK MANAGEMENT

Time: 3 Hours

Max. Marks: 100

JUNE 2011

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)

- a. The transmission mode which allow both communicating devices to transmit and receive data simultaneously is
- (A) Simplex (B) Full-duplex
(C) Half-duplex (D) None of these
- b. Which of the following is a voiceband channel?
- (A) Telephone line (B) Telegraph line
(C) Coaxial cable (D) Microwave systems
- c. Asynchronous transfer mode packet are of fixed size, each being _____ length.
- (A) 43 bytes (B) 93 bytes
(C) 63 bytes (D) 53 bytes
- d. CMIP and SNMP specify the management for
- (A) communication and internet management protocol for OSI
(B) organization management for OSI
(C) both (A) and (B)
(D) none of the above
- e. IEEE network management state
- (A) management of layer 1 and 2 of the OSI reference model
(B) LAN, MAN and address standard on broadband
(C) physical and data link layer
(D) all of the above
- f. In encapsulated SNMP management addition of an IP header to the transport PDU form
- (A) Application PDU (B) Transport PDU
(C) Network PUD (D) None of the above

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- g. The entry states associated with RMON1 textual data type exist in
- (A) valid and invalid state (B) create request state
(C) under creation state (D) any one of the above state
- h. Packet filtering is implemented in
- (A) session, data link, transport layer (B) data link, network, transport layer
(C) physical, data link, network layer (D) application, network, transport layer
- i. Specification for implementing JMX manageable resources are written at _____
- (A) manager level (B) agent level
(C) instrumentation level (D) additional manager API's
- j. *ping* is a
- (A) tool that use X Windows (B) probes such as ICMP echo message
(C) extension to SNMP (D) NMS queries
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**Answer any FIVE Questions out of EIGHT Questions.
Each question carries 16 marks.**

- Q.2** a. Explain the TCP/IP based internet and intranet network. (5)
- b. Define communication protocol and list the commonly used protocols in network management. (5)
- c. What is network management and its salient features? Write in short about the future of network management. (6)
- Q.3** a. The following is the informal record structure of a home address: (10)
- | | |
|----------|----------------------|
| Name | Ram Sharma |
| Address | 2467 Prithviraj Road |
| City | New Delhi |
| State | Delhi |
| Zip Code | 110009 |
- Write for your record:
- (i) the informal record structure
(ii) an ASN.1 description of the record structure
(iii) the record value for home address
- b. List the five network management standards and two salient features for each. (6)
- Q.4** a. Draw and explain the SNMP network management architecture. (8)

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- b. Write short notes on the following:
(i) SNMP manager and SNMP agent
(ii) Information model of SNMP management (4 × 2)
- Q.5** Explain the following:
(i) Functional Model of SNMP management
(ii) SNMP Access Policy
(iii) SNMP Operations
(iv) SNMP message (4 × 4)
- Q.6** a. What is Remote Monitoring? Explain EntryStatus for RMON1 textual convention. (8)
- b. Describe the ATM Remote Monitoring? (8)
- Q.7** a. Describe the following monitoring tools:
(i) nslookup (ii) host
(iii) ping (iv) bing
(v) snoop (vi) iptrace
(vii) netstat (viii) tracert (1 × 8)
- b. Write short notes on:
(i) Methods to gather network statistics
(ii) Components of network management system (2 × 4)
- Q.8** a. What are faults in a network management system? Give the step wise process for fault management. (6)
- b. What is cryptographic communication? Give the difference between secret key and public key cryptography. (6)
- c. What is the need for report management? List the different types of reports. (4)
- Q.9** a. Write short notes on:
(i) DMI
(ii) WBEM
(iii) JMX (3 × 4)
- b. Justify the following statement “Java technology is being extended to manage distributed management storage network”. (4)