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**Question Paper Code: 41241**

M.E. DEGREE EXAMINATION, DECEMBER 2014.

First Semester

Computer Science and Engineering (With Specialization in Networks)

14PNE102 – DESIGN AND MANAGEMENT OF COMPUTER NETWORKS

(Regulation 2014)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions.

PART A - (5 x 1 = 5 Marks)

- Sum of all the data all network nodes have ready to send at a particular time  
(a) Throughput (b) Offered load (c) Optimum utilization (d) Efficiency
- Which does not transmit any information about the prefix length?  
(a) Classful routing (b) Classless Routing (c) Hierarchical routing (d) variable routing
- When both the sender and receiver use the same secret key, it is called a  
(a) symmetric key (b) asymmetric key (c) plain key (d) cipher key
- What is used to describe the protocols and processes for connecting ATM and Frame Relay WAN?  
(a) Frame Relay (b) WAN interworking  
(c) Network interworking (d) Service interworking
- What helps a network manager keep track of network devices and maintain information on how devices are configured?  
(a) Configuration management (b) Performance management  
(c) Accounting management (d) Security management

PART - B (5 x 3 = 15 Marks)

- Define Route summarization.
- State the advantages of Hierarchical addressing.
- What is a packet filter?

9. Differentiate centralized and distributed cabling scheme.
10. Mention the types of network management processes.

PART - C (5 x 16 = 80 Marks)

11. (a) (i) How will you characterize a network flow by its direction and symmetry? Explain Terminal/host traffic flow and Distributed computing traffic flow. (8)
- (ii) Explain how the efficiency is affected by frame size, windowing and flow control, and error-recovery mechanisms? (8)

Or

- (b) Categorize the VPN applications. Describe site-to-site and Remote access VPN. (16)

12. (a) Write short notes on:

- (i) Variable- length subnetting (8)
- (ii) Supernetting (8)

Or

- (b) With suitable example illustrate the process of choosing and applying routing protocols. (16)

13. (a) Elucidate how the security is implemented in the components of an enterprise network. (16)

Or

- (b) Explain the method for devices to authenticate to a wireless access point along with necessary steps. (16)

14. (a) Summarize various choices available for implementing Ethernet. (16)

Or

(b) Explain the Synchronous Optical Network and Frame Relay in WAN Technology. (16)

15. (a) Illustrate the network management architecture with necessary components. (16)

Or

(b) Explain how Simple Network Management Protocol and Remote Monitoring help in network management? (16)

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