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Question Paper Code: 52141

M.E. DEGREE EXAMINATION, DECEMBER 2015

First Semester

Computer Science and Engineering (With Specialization in Networks)

15PNE101 - DESIGN AND MANAGEMENT OF COMPUTER NETWORKS

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. What factor determines the size of send window in TCP?
 - (a) Size of receiver window
 - (b) Transmission time
 - (c) Propagation time
 - (d) Transmission delay
2. Which one of the following is used by Ethernet to connect one or more LAN segments so that end systems on different segments can communicate with each other transparently?
 - (a) Transparent switches
 - (b) Transparent bridges
 - (c) Gateways
 - (d) Hubs
3. RFC 4301 deals with
 - (a) Security Architecture for the Internet Protocol
 - (b) IP Authentication Header
 - (c) IP Encapsulating Security Payload (ESP)
 - (d) Internet Security Association and Key Management Protocol (ISAKMP)
4. A physical layer specification for high-speed synchronous transmission of packets or cells over fiber-optic cabling is _____.
 - (a) Leased line
 - (b) Synchronous digital hierarchy
 - (c) Synchronous optical network
 - (d) Frame relay

5. _____ group in RMON2(Remote Monitoring 2) contains traffic statistics for each supported protocol.

(a) Protocol directory

(b) Protocol distribution

(c) Address mapping

(d) Probe configuration

PART - B (5 x 3 = 15 Marks)

6. Analyze the importance of route summarization.

7. On what basis routing protocols are selected?

8. People who are new to security often assume that security simply means encryption. Write your opinion about this naive assumption? What are some other aspects of security that are just as important as encryption?

9. List the criteria for selecting a router for remote sites.

10. What are the components of network management architectures? Also briefly explain them.

PART - C (5 x 16 = 80 Marks)

11. (a) Describe the classifications of traffic flow for network applications in detail. (16)

Or

(b) Why is it difficult to achieve true load balancing (as opposed to load sharing) in most networks? (16)

12. (a) What is a discontinuous subnet? Why do some enterprise networks have discontinuous subnets? Why don't classful routing protocols support discontinuous subnets? (16)

Or

(b) (i) Compare and contrast classful and classless routing protocols. (8)

(ii) Analyze the security issues of open shortest path first routing protocol. (8)

13. (a) What is the difference between a security plan and a security policy? How do these two relate to each other? (16)

Or

(b) Discuss in detail how an authentication takes place in the IEEE 802.11 standard - wireless LAN. (16)

14. (a) Explain the various technologies for the remote-access and wide-area network (WAN) components of an enterprise network design. (16)

Or

(b) (i) Describe the most important criteria for selecting an internetworking device. (6)

(ii) Why are QoS features often necessary in WAN routers? Explain in detail. (10)

15. (a) Compare and contrast various network management designs. (16)

Or

(b) (i) A network management system can communicate with a managed device using a request-response protocol or a trap mechanism. What are the advantages and disadvantages of these two methods? (8)

(ii) Write short notes on Management Information Bases. (8)
