Reg. No. : | | | | | | | | | | |

Question Paper Code: 45402

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2019

Fifth Semester

Electronics and Communication Engineering

14UEC502 - DATA COMMUNICATION AND NETWORKS

(Regulation 2014)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The _____ layer changes bits into electromagnetic signals.

   (a) Physical (b) Transport
   (c) Data link (d) None of the above

2. The highest data rate is provided by which of the following medium.

   (a) Coaxial cable (b) Optical fiber
   (c) Microwave (d) Laser beam

3. Data link control deals with the design and procedures for _____ communication.

   (a) node-to-node (b) host-to-host
   (c) process-to-process (d) server-to-server

4. For wireless network, _____ was invented

   (a) CSMA/CD (b) CSMA (c) CSMA/CA (d) ALOHA

5. Header of datagram in IPv4 has _____.

   (a) 0 to 20 bytes (b) 20 to 40 bytes
   (c) 20 to 60 bytes (d) 20 to 80 bytes

6. The Routing Information Protocol (RIP) is an intra domain routing based on _____ routing.

(a) distance vector (b) link state (c) path vector (d) none of these

7. _____ is a class-based QoS model designed for IP.

(a) Integrated Services (b) Differentiated Services
(c) Connectionless (d) Connection-Oriented

8. Which of t he following services use TCP?

(a) DHCP (b) SMTP (c) FTP (d) TFTP

9. _____ is a language for creating Web pages.

(a) HTTP (b) HTML (c) FTTP (d) none of these

10. Which configuration is not supported in AES?

(a) 10 rounds with a key size of 128 bits
(b) 12 rounds with a key size of 192 bits
(c) 16 rounds with a key size of 228 bits
(d) 14 rounds with a key size of 256 bits

PART - B (5 x 2 = 10 Marks)

11. List the key elements of protocol.

12. Define framing and the reason for its need.

13. List the two types of packet switching.

14. What is the maximum size of the process data that can be encapsulated in a UDP datagram?

15. List the techniques to improve the quality of service.

PART - C (5 x 16 = 80 Marks)

16. (a) How are the layers abstracted in OSI model? Explain their functions. (16)

Or

(b) (i) Classify the categories of network. (6)

(ii) Discuss about ISO reference model with a neat sketch. (10)

17. (a) Given the data word as 1010101010 and the divisor 10111. Show the generation of the code word at the sender site. Show the checking of the code word at the receiver site. (16)

Or

(b) (i) Describe the functional design of any one protocol defined for noisy channel. (8)

(ii) Explain the access method used for wireless LANs. (8)

18. (a) (i) Briefly define sub-netting and super-netting. How do the subnet mask and supernet mask differ from a default mask in class-full addressing? (6)

(ii) Explain the header details and working of address resolution protocol. (10)

Or

(b) (i) Discuss the structure and working of Border gateway protocol. (8)

(ii) Compare and contrast the fields in the main header of IPV4 and IPV6. (8)

19. (a) (i) If an application needs to protect the boundaries of the message to be transmitted, which protocol should be used? Explain the choice of protocol with justification. (6)

(ii) Discuss the quality of service parameters in networks and how to improve them. (10)

Or

(b) Explain the congestion control techniques applicable for TCP networks. (16)

20. (a) (i) What are the main categories of DNS messages? Explain. (8)

(ii) Name the common components and their functions in a browser. (8)

Or

(b) (i) Explain why FTP does not have a message format. (6)

(ii) Illustrate cryptography with three examples of various forms. (10)

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