Register Number: ……………………..

B.E., DEGREE EXAMINATIONS: MAY/JUNE 2013

Sixth Semester

ELECTRONICS AND COMMUNICATION ENGINEERING

ECE114**:** Computer Networks

Time: Three Hours   **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Which layer acts as a liaison between network support layers and user support layers ?

    a)   physical layer
    b)   data link layer

    c)   application layer
    d)   transport layer

2. Which encoding type always has a non zero average amplitude

    a)   unipolar
    b)   Bipolar

    c)   polar
    d)   manchester

3. Error detection in OSI model is usually done at

    a)   physical layer
    b)   network layer

    c)   Data link layer
    d)   application layer

4. Stations do not sense the medium during this time

    a)   RTS
    b)   CTS

    c)   NAV
    d)   SIFS

5. What is the length of IPv4 header?

    a)   40 Bytes
    b)   20 Bytes

    c)   20 – 60 Bytes
    d)   40 – 60 Bytes

6. Identify the class of IP address 191.1.2.3

    a)   Class A
    b)   Class C

    c)   Class B
    d)   Class D

7. Which of the following applies to UDP?

    a)   Is unreliable and connectionless
    b)   provides sequence and ACK number for datagram

    c)   report certain errors
    d)   contains destination & source port address

8. Which is a legal port address in case of 16 bit port number?

    a)   75,543
    b)   85735

    c)   65535
    d)   95673

9. In public key cryptography ,only the receiver has the possession of
   a) Private key   b) Public key
   c) Both private and public keys   d) none

10. Which protocol pulls the message to the recipient mail box?
   a) www   b) UA
   c) MAA   d) MTA

PART B (10 x 2 = 20 Marks)

11. Show how 01011110 bit pattern is encoded using Manchester and differential Manchester encoding technique?

12. What is point to point and multipoint connection?

13. In HDLC what is bit stuffing and why it is needed?

14. Find the CRC remainder for the data 100100 using the divisor 1101.

15. What are the types of transitions defined by IEEE 802.11 standard?

16. What is default mask?

17. What is the difference between service point address, logical address and physical address?

18. What is the difference between reliable and unreliable communication?

19. List the two types of DNS messages?

20. Contrast straight, compressed & expanded permutation of cryptography.

PART C (5 x 14 = 70 Marks)

21. a) (i) Explain the layers that are responsible for error free node to node and process to process delivery and also explain its functions. (8)

    (ii) Compare datagram and virtual circuit switching. (6)

    (OR)

    b) (i) Illustrate with neat diagrams the transmission media, fiber optic cable (6)

    (ii) Explain in detail digital to digital encoding technique? (8)

22. a) (i) Discuss in detail the error correction technique that is used to detect and correct errors by adding redundant bits at suitable positions. (10)

    (ii) Write short notes on bridges. (4)

    (OR)

    b) (i) Explain the access method CSMA/CD and MAC frame format of IEEE 802.3. (6)

    (ii) Illustrate with diagrams how selective repeat sliding window ARQ technique (8) utilizes the transmission medium effectively compared to GO Back -N protocol.

23. a) (i) What is masking? With suitable example explain the masking techniques? (6)

   (ii) Explain the count to infinity problem; also discuss how it is eliminated in (8) distance vector routing algorithm.

(OR)

   b) (i) Compare IPv4 and IPv6. (6)

   (ii) Explain the method to improve QOS parameters. (8)

24. a) (i) Explain congestion control methods of TCP. (10)

   (ii) Illustrate with neat diagram the frame format of UDP. (4)

(OR)

   b) (i) Explain the connection oriented protocol that is used as transport layer protocol? (9)

   (ii) Write short notes on integrated services. (5)

25. a) (i) Explain the protocol that supports users to send their e-mails.

(OR)

   b) (i) Explain RSA algorithm in Public key cryptography (7)

   (ii) Explain the DES algorithm to encrypt and decrypt the message. (7)

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