EE-705A

COMPUTER NETWORK

Time Allotted: 3 Hours | Full Marks: 70

The questions are of equal value.
The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

GROUP A
(Multiple Choice Type Questions)

1. Answer all questions. $10 \times 1 = 10$

(i) Process to process delivery is the function of.....layer.

(A) transport (B) network
(C) physical (D) none of these

(ii) Which channel access method is used in IEEE 802.5 network?

(A) CSMA/CD (B) token bus
(C) token ring (D) all of these

(iii) Which class of IP address is reserved for multicast communication?

(A) class A (B) class B
(C) class C (D) class D

(iv) Repeaters function in the.....layer

(A) data link (B) physical
(C) network (D) transport

(v) Port number is:

(A) process number (B) computer physical address
(C) both (A) and (B) (D) none of these

(vi) What network topology implements at least two paths to and from each node?

(A) bus (B) ring
(C) mesh (D) star

(vii) The hamming code is used for:

(A) error detection (B) error correction
(C) error encapsulation (D) both (A) and (B)

(viii) Which channel access method is used in Ethernet network?

(A) CSMA/CD (B) token bus
(C) token ring (D) all of those

(ix) UDP is:

(A) connectionless (B) connection-oriented
(C) both (A) and (B) (D) none of these

(x) Which address cannot be changed?

(A) Hardware address (B) logical address
(C) both (A) and (B) (D) none of these

GROUP B
(Short Answer Type Questions)

Answer any *three* questions.

2. (a) What is the purpose of subnetting? Find the Net-Id and the Host-Id of the following IP addresses.
i) 19.34.21.5
ii) 220.34.8.9
(b) A network has subnet mask 255.255.255.224. Determine the maximum or number of Host in this network. Also determine the broadcast address of this network.

3. (a) What is bit rate? What is baud rate?
(b) An analog signal carries 4 bits in each signal unit. If 1000 signal units are sent per second, find the baud rate and bit rate.

4. How does Manchester encoding differ from differential Manchester encoding? 5

5. What is Gateways? Differentiate between Hub and Switch. 2+3

6. What do you mean by MAC and LLC? Explain. 3+2

GROUP C
(Long Answer Type Questions)

Answer any *three* questions. 3×15 = 45

7. (a) Explain the operation of CDMA technology. 5
   (b) Difference between router & bridge? 3
   (c) Briefly discuss about the different guided media that are used in computer networks and make a comparison among them. 5
   (d) What is OSI reference model? 2

8. (a) Explain CRC code with example. 8
   (b) Describe 802.3 frame formats. Why is padding required? 3
   (c) Indicate Q_oS in transport layer 4

9. (a) How does a single bit error differ from a burst error? 5
   (b) State the advantage of IPV6 over IPV4. 5
   (c) Differentiate between ARP and RARP. 5

10. (a) What is distance vector routing protocol? What is the difference between RIP and EGP? 5
    (b) What do you understand by data privacy? How can the authentication, integrity and non-repudiation be implemented by digital signature? 5
    (c) Write down the similarities and differences between OSI and TCP/IP model. 5

11. Write short notes on any *three* of the following: 3×5
    (a) HTTP
    (b) BGP
    (c) RIP
    (d) SMTP
    (e) DNS