This question paper contains 2 printed pages.

1728

Your Roll No.....

A

MCA/ II Sem.

Paper MCA- 204- Data Communication and Computer Networks
(Admissions of 2009 and onwards

Time : 2hours *Maximum Marks :50*

(Write your Roll No. on the top immediately on receipt of this question paper.)

All questions are compulsory.
Attempt all parts of a question together.
Marks are indicated against each question.

1.

(a) If the Ethernet destination address is 05:01:02:03:04:05. What is the type of address (unicast, multicast or broadcast)? What is the broadcast address for Ethernet?

[2]

(b) Change the multicast IP address 230.43.14.7 to an Ethernet multicast physical address.

[2]

(c) If the unit exchanged at the data link level is called a frame and the unit exchanged at the network layer is called a packet, do frames encapsulate packets or do packets encapsulate frames? Explain your answer.

[2]

(d) Some books quote the maximum size of the Ethernet frame as 1518 bytes instead of 1500 bytes. Are they wrong? Explain your answer.

[2]

(e) What is a proxy server and how is it related to HTTP?

[2]

2.

(a) What is the difference between the delivery of a frame in the data link layer and the delivery of a packet in the network layer?

[3]

(b) Do port addresses need to be unique? Why or why not? Why are port addresses shorter than IP addresses?

[3]

(c) Show the topology of the network given the routing table of the router R1 as follows:

Mask	Network Address	Next Hop	Interface
/27	201.18.17.224	---	m1
/18	135.14.182.0	---	m0
Default		132.45.11.2	m2

[4]

3.

(a) Why do we need a DNS system when we can directly use an IP address? What are the three domains of domain name space?

[3]

(b) How does caching increase the efficiency of name resolution?

[2]

(c) What do you understand by FQDN and PQDN? Determine which of the following is an FQDN and which is a PQDN?

(i) xxx.
(ii) edu.
(iii) xxx.yyy.edu
(iv) zzz.yyy.xxx.edu

Is PQDN necessarily shorter than FQDN?

[5]

4.

(a) Compare the TCP header and the UDP header. List the fields in the TCP header that are missing from the UDP header. Give the reasons for their absence.

[4]

(b) The following is a dump of a TCP header in hexadecimal format

05320017 00000001 00000000 500207ff 00000000

(v) What is the source port number?
(vi) What is the destination port number?
(vii) What is the sequence number?
(viii) What is the acknowledgement number?
(ix) What is the length of the header?
(x) What is the window size?

[6]

5. Distinguish between the following

(a) Logical Link Control and Media Access Control
(b) 10Base-T: Twisted-pair Ethernet and 10base-F: Fiber Ethernet
(c) Bridge and Router
(d) IPv4 addresses and IPv6 addresses
(e) Piconet and Scatternet

[10]