2009

M.Sc.

4th Semester Examination

ELECTRONICS

PAPER—EL-2202

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer *Q. No. 1* and any *three* from the rest.

1. Answer any *five* questions : 2×5

   (a) What is the difference between hul and a router?

   (b) What is the basic difference between the client and the server programme?

   (c) Physical, Port and IP address are used in data communication. In a TCP/IP environment. What layers are they associated with?

(d) How is the flow control at the transport layer different from data link layer in OSI reference model?

(e) What is bit stuffing? Why is it used?

(f) How router is different from a repeater or a bridge?

(g) Find the subnetwork address if the destination address is 19·30·80·5 and the mask is 255·255·192·0?

(h) Differentiate between circuit switching & virtual circuit.

2. (a) Explain the HDLC frame format and how the frames are different to each other?

(b) State the major responsibilities of the Data Link Layer.

(c) Suppose transmission channels become virtually error free. Is the data link layer still needed?

6+2+2

3. (a) Compare stop and wait & sliding windows protocol with respect to their link utilization.

(b) What is ARQ? Compare the different types of ARQ technique. 5+5

4. (a) A company is granted the site address 181·56·0·0 (class B). The company needs 1020 subnets. Design the subnets.

(b) A supernet has the first address of 205·16·32·0 and a supernet mask of 255·255·248·0. How many blocks are in this supernet and what is the range of addresses ? Also a router receives three packets with the following destination address :

205·16·37·44

205·16·42·56

205·17·33·76

which packet belongs to the supernet ?

5+5

5. (a) Make the routing table for router R1 in the following figure. (Fig-1)

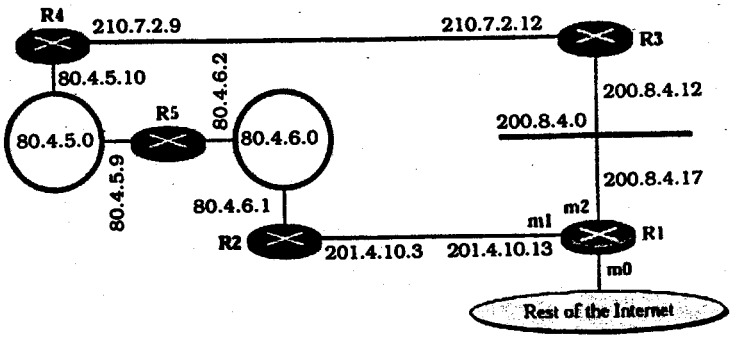

Fig-1

(b) The routing table for router R1 is given below. (Table-1) Draw its topology.

Mask	Destination	Next Hop	I.
255·255·0·0	110·70·0	—	m0
255.255.0.0	180·14·0·0	—	m2
255·255·0·0	190·17·0·0	—	m1
255·255·0·0	130·4·0·0	190·17·6·5	m1
255·255·0·0	140·6·0·0	180·14·2·5	m2
0·0·0·0	0·0·0·0	110·70·4·6	m0

5+5

Table-1

6. Write briefly short notes on any *four* (4) of the following topics. $2\frac{1}{2} \times 4$

(a) www.

(b) HTTP.

(c) Public Key encryption.

(d) CSMA / CD.

(e) CRC based Error Detection.

(f) DNS.

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