Sr. No. of question paper: 5890 **Your Roll No.....**

This question paper contains 2 printed pages

Unique Paper Code	:	**2513010007**
Name of the Course	:	**B. Sc.(H) Electronics**
Name of the Paper	:	**Computer Networks(DSE)**
Semester	:	**V**
Duration	:	**3 hours.**
Maximum Marks	:	**90**

Instructions for Candidate

1. There are seven questions in all, out of which you have to attempt any five questions.
2. All questions carry equal marks.
3. Use of Scientific Calculator is allowed.
4. First Question is Compulsory.

Q1(a) Differentiate between physical address and specific address. (3 x 6)

(b) Explain the concept of server and browser in www.

(c) In which layer do SMTP and FTP operate?

(d) The data input bit stream is 11010100. Draw the following encoding schemes

i. Unipolar RZ ii. Bipolar NRZ iii. Manchester

(e) Draw layered structure of TCP/IP model.

(f) Compare and contrast byte stuffing and bit stuffing with an example.

Q2(a) An Internet employing the TCP/IP protocols uses four levels of addresses. Explain each briefly, mentioning the specific layer each is associated with. (6)

(b)Given 12 bit hamming codeword having of 8 bit data and 4 check bits ,as given in the following tables . Find the value of x and y. Explain your answer (6)

Data bits							
d_8	d_7	d_6	d_5	d_4	d_3	d_2	d_1
1	1	0	x	0	1	0	1

Check bits			
c_8	c_4	c_2	c_1
y	0	1	0

(c)A host in Class C network been assigned an IP address 192.168.17.9 Find Host octet and Network octet in the block . Also find the number of first address and the last address. (6)

Q3(a) What is Flooding? State one problem with this algorithm and suggest techniques to overcome it. (6)

(b) Explain the flow control techniques used in DLL. (6)

(c) What is the difference between Open loop congestion control and Closed loop congestion control? Explain one mechanism of each kind. (6)

Q4(a) What is Hamming Distance? Find Hamming Distance between 10101010 and 10010010. (6)

(b) How is guided media different from unguided media? Name three main classes of guided media .What is the position of transmission media in OSI or Internet Model ? (6)

(c) Draw the labeled TCP Segment Header mentioning the bit numbers for each field. (6)

Q5(a) Briefly explain five properties that are desirable in a Routing Algorithm. (6)

(b) What is the difference between Connectionless and Connection-oriented services? Which type of service is provided by IPv4? (6)

(c) What are FQDN and PQDN . Determine which of the following is an FQDN and which is a PQDN and why (6)

i. apollo.atc.fhda.edu
ii. www.funny.int.
iii. www

Q6(a) What is a URL and what are its components. Explain why FTP does not have a message format? (6)

(b) TCP opens a connection using an initial sequence number (ISN) of 14,534. The other party opens the connection with an ISN of 21,732. Show the three TCP segments during the connection establishment. (6)

(c) Draw the labeled TCP Segment Header mentioning the bit numbers for each field. (6)

Q7(a) Why is the processing at the receiver for Selective-Repeat ARQ more complex. Explain with example. (6)

(b) Compare the TCP with the UDP . List the fields in the TCP header that are missing for the UDP header. Give reasons for their absence. (6)

(c) Expand the IPv6 address FDEC:74::B0FF:0:FFF0 (6)