



DHARMSINH DESAI UNIVERSITY, NADIAD
FACULTY OF TECHNOLOGY
B.TECH. SEMESTER V [Information Technology]
SUBJECT: (IT-505) Computer And Communication Network

Examination : First Sessional
Date : 31/07/2014
Time : 11:15 to 12:30

Seat No. :
Day : Thursday
Max. Marks : 36

INSTRUCTIONS:

1. Figures to the right indicate maximum marks for that question.
2. The symbols used carry their usual meanings.
3. Assume suitable data, if required & mention them clearly.
4. Draw neat sketches wherever necessary.

Do as directed.

- A Match the following:** [2]
- | | |
|--------------|---------------------|
| (1) Hub | (a) Network Layer |
| (2) Repeater | (b) Transport layer |
| (3) Bridge | (c) Physical Layer |
| (4) Router | (d) Data link Layer |
| (5) Switch | |
| (6) Gateway | |
- B** A computer is using the following sequence numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 0, 1, Then what is the size of sender and receiver window using go-back-n and selective repeat protocol? [2]
- C** In the GO-BACK-N sliding window protocol, if the window size is 31, what is the range of sequence number? [2]
- D** A bit-stuffing based framing protocol uses an 8-bit delimiter pattern of 01111110. If the output bit-string after stuffing is 01111100101, then what was the input bit-string? [2]
- E** In the following pairs of OSI protocol layer/sub-layer and its functionality, the **INCORRECT** pair is [2]
- (A) Network layer and Routing
(B) Data Link Layer and Bit synchronization
(C) Transport layer and End-to-end process communication
(D) Medium Access Control sub-layer and Channel sharing
- F** The Hamming distance between 001111 and 010011 is [1]
- G** In Stop and Wait ARQ with piggybacking if Frame1 Ack0 is sent by receiver then what the sender sends? [1]
- Q.2 Attempt Any TWO of the following questions.** [12]
- a** Host A is sending a 10,000-byte file to Host B using a sliding window protocol. Packets are limited to 1000 bytes each, packets are numbered by packet number starting at 1, and the Window size is 5 packets. Packet 3 is lost. [6]
- a. Which packets are retransmitted if Host A and Host B are using the Go-Back-N protocol?
b. Which packets are retransmitted if Host A and Host B are using the Selective Repeat protocol?
- b** A 12-bit hamming code whose hexadecimal value is 0xE4F arrives at a receiver. What was the original data value in hexadecimal? Assume that not more than one bit is in error.(number the bits from left to right) [6]
- c** Six stations A through F communicate using MACA protocol. Is it possible that two transmissions take place simultaneously? Explain your answer. [6]
- Q.3(a)** Explain OSI reference model in detail. [6]
- Q.3(b)** What are the difficulties to establish a bridge between 802.X to 802.Y? Also explain transparent bridge with figure. [6]
- OR-**
- Q.3(a)** Explain collision free protocols in detail. [6]
- Q.3(b)** Explain 802.5 LAN standard in detail. [6]