Registration No. : ⬚⬚⬚⬚⬚⬚⬚⬚⬚⬚

Total number of printed pages – 2

Sixth Semester (Special/Back) Examination – 2013

COMPUTER NETWORK AND DATA COMMUNICATION

BRANCH : AEIE

QUESTION CODE : E 390

Full Marks – 70

Time : 3 Hours

*Answer Question No. 1 which is compulsory and any **five** from the rest.*
The figures in the right-hand margin indicate marks.

1. Answer the following questions :   2 × 10

    (a) Distinguish between LAN, MAN and WAN.

    (b) What do you mean by a Peer-to-Peer process ?

    (c) A signal has Four data levels with Pulse duration of 2 ms. What are the Pulse rate and bit rate of this signal ?

    (d) Distinguish between Parallel and Serial Transmission.

    (e) What is the purpose of a Guard band ?

    (f) In HDLC, what is bit stuffing and why is it needed ?

    (g) What is the difference between Polling and Selecting ?

    (h) Compare a Piconet and a Scatternet.

    (i) Distinguish between Host-specific routing and Network-specific routing.

    (j) Name the four types of OSPF connections.

2. (a) Explain the procedure of Analog to Digital signal conversion technique. 5

    (b) Discuss the mechanism of a space-division switch and compare it with the mechanism of a time-division switch.   5

P.T.O.

3. (a) Discuss the Frequency Division Multiplexing technique. How it differs from Time Division Multiplexing ? 5

   (b) The code 11110101101 was received. Using Hamming encoding algorithm find which bit is in error and what was the original code sent ? 5

4. What is line coding ? Discuss various types of Line coding schemes. Given a binary data stream of 01110010. Encode this stream using the following encoding streams : 10

   (i) NRZ-L

   (ii) Differential Manchester Encoding

   (iii) RZ

5. (a) What do you mean by transmission medium ? Discuss various types of transmission media with their relative advantages and disadvantages. 5

   (b) Discuss the datagram format of IPV4 protocol. What are the advantages of IPV6 over IPV4 ? 5

6. (a) Discuss the functions of various sub layers of Gigabit Ethernet physical layer. 5

   (b) Compare and contrast distance vector routing with link state routing. 5

7. (a) Explain the working principle of connectionless Iterative server with suitable client and server algorithms. 5

   (b) Give an account of the frame format of I-Frame in HDLC protocol, describing the function of each field. 5

8. Answer any **two** : 5×2

   (a) Traffic Shaping

   (b) ATM

   (c) ICMP messages

   (d) CSMA/CD.