RAMAKRISHNA MISSION VIDYAMANDIRA
(Residential Autonomous College affiliated to University of Calcutta)

B.A./B.Sc. SIXTH SEMESTER EXAMINATION, MAY 2018
THIRD YEAR [BATCH 2015-18]
COMPUTER SCIENCE (Honours)
Paper : VII [Gr-B]

Date : 08/05/2018
Time : 11 am – 1 pm

Full Marks : 45

1. Answer **<u>any one</u>** question : [1×5]

    a) An ISP is granted a block of address starting with 190·168·0·0/16. The ISP needs to distribute these addresses to two groups of customers as follows :

        i) First group has 128 customers; each needs 256 addresses.

        ii) Second group has 64 customers; each has 64 addresses.

    Design the address allocation scheme. [5]

    b) i) Give the difference between twisted pair and co-axial cable. [3]

       ii) How Satellite Communications are done? [2]

Answer **<u>any four</u>** questions from **<u>Question Nos. 2 to 7</u>** : [4×10]

2. a) Do port addresses need to be unique? Why or why not? [2]

    b) What is the concept of ephemeral port number? [1]

    c) Compare FTP, HTTP and TELNET as a protocol. [4]

    d) A noiseless channel with a bandwidth of 3000 Hz is transmitting a signal with two signal levels. Calculate maximum bit rate. [2]

    e) Differentiate between bandpass channel and low pass channel. [1]

3. a) What is ARP, RARP, BOOTP and DHCP? [4]

    b) What is a name server? Write down name of some other kind of servers that exists in networking. [2+1]

    c) Explain different types of transmission impairments. [3]

4. a) Write a short note on POP3. [4]

    b) Compare static, dynamic and active webpage. [3]

    c) Write down the steps of calculating CRC code—with an example. [3]

5. a) Explain the three phases of a circuit switched network communication in brief. [4]

    b) Explain subnetting and supernetting. [3]

    c) What is footprint? [1]

    d) Write a short note on IMAP. [2]

6. a) Explain any four components of IPv4 datagram header. [4]

    b) Explain basic steps of Pulse Code Modulation (PCM) encoder in detail. [6]

7. a) Differentiate between static and dynamic routing. [2]

    b) What are the four fundamental characteristics of data commination? [2]

    c) Explain any two error and flow control mechanisms of Data Link layer. [5]

    d) Why ADSL modem is called asymmetric? [1]

———— × ————