AI -1548

M. A. / M. Sc. (Final)

Term End Examination, 2020-21

MATHEMATICS

Paper : Fourth

(Fundamental of Computer Science and Data Structure)

Time Allowed : Three hours

Maximum Marks : 100

Minimum Pass Marks : 36

Note : Answer any five questions. All questions carry equal marks.

1. Convert the following :

   (a) $(AB \cdot CD)_{16} = (\quad)_4$

   (b) $(7351)_8 = (\quad)_{10}$

   (c) $(3214 \cdot 13)_{10} = (\quad)_8$

   (d) $(123)_4 = (\quad)_2$

2. What is the role of memory in computer system? Explain memory organization.

3. Explain the process of Input/Output with processor communication.

4. Explain the following important protocols of communication.

   (a) HTTP

   (b) FTP

   (c) SMTP

   (d) TCP

5. What is recursion? Write a recursive algorithm of tree traversing.

6. Convert the following infix notation into polish notation using stack :

   $$a * b + c^{\wedge}d - e/f + g^{\wedge}h$$

7. Explain quick sort with example.

8. What is binary search tree? Construct BST for the given data set in sequence
   17, 19, 10, 6, 11, 22, 18, 6, 3, 45, 16, 44, 1, 3

9. What is Networking? Explain types of Network.

10. What do you mean by Hardcopy output and softcopy output? Explain 2 devices of each type with diagram.