



**AJ-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.*

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 :
 
$$a * b + c ^ d - e / f + g ^ h$$
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.

1. Convert the following :

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

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

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

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

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

[ 3 ]

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