MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)
MCA I Year II Semester (R16) Supplementary End Semester Examinations – September 2021
(Regulations: R16)

DATA STRUCTURES THROUGH C++

Time: 3Hrs   Max Marks: 50

> Attempt all the questions. All parts of the question must be answered in one place only.
> **In Q.no 1 to 5 answer either Part-A or B only**

Q.1(A) a. What is member function? Explain its general syntax , merits and demerits   10M
b. What is a static data member? How to use static data members? Explain with an example

OR

Q.1(B) Define exception handling. Explain the use of try, catch and throw for exception   10M
handling in C++.

Q.2(A) a. Write about variable length character strings   10M
b. What is difference function overloading and function templates. Illustrate with an example.

OR

Q.2(B) What is inheritance? What are the different forms of inheritance supported by C++?   10M
Explain each with suitable example.

Q.3(A) a. What is a linked list? Write the advantages and disadvantages of linked lists   10M
b. Write an algorithm to implement operations of the single linked list

OR

Q.3(B) a. What is stack? Write its applications   10M
b. Write an algorithm to evaluate the postfix expression

Q.4(A) a. What is doubly linked list? Explain its operations   10M
b. Write the advantages and disadvantages of doubly list over single linked list

OR

Q.4(B) How circular linked list is organized. Discuss its operations   10M

Q.5(A) a. What is a Binary Search tree? What are the advantages of Binary Search?   10M
b. Explain about threaded binary search tree.

OR

Q.5(B) a. Write an algorithm to implement the binary search and calculate its complexity   10M
b. What is radix sort? Explain it with an example

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