MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)
MCA I Year II Semester (R16) Supplementary End Semester Examinations – Jan' 2020
(Regulations: R16)
DATABASE MANAGEMENT SYSTEMS

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)	Explain the architecture of DBMS with a neat diagram.	10M
	OR	
Q.1(B)	Draw the ER diagram for Library Management System.	10M
Q.2(A)	i. Explain the different type of key constraints available in Relational model.	(5M +
	ii. What is a view? Explain its advantages.	5M)
	OR	
Q.2(B)	Write short notes on the following and give examples for it i. DDL ii. DML	10M
Q.3(A)	Explain the different anomalies in the database design with examples.	10M
	OR	
Q.3(B)	Explain BCNF and 4NF. Give a relation which is in 4NF.	10M
Q.4(A)	Explain the lock based concurrency control mechanism with example.	10M
	OR	
Q.4(B)	i. Explain the ACID properties of transaction.	(5M +
	ii. Explain the Aries Recovery Algorithm.	5M)
Q.5(A)	What is trigger? Give SQL syntax for creating different types of trigger.	10M
	OR	
Q.5(B)	Explain the aggregate functions with example.	10M

*** END***

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)
MCA I Year II Semester (R16) Supplementary End Semester Examinations - Jan 2020
(Regulations: R16)
OPERATING SYSTEMS

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)	How network computers are differs from traditional personal computers? Describe some usages scenario in which it is advantageous to use network computers.	10M

OR

Q.1(B)	i) What is System call? Discuss major System calls of Operating Systems.	5M
	ii) Explain the Evolution of Operating Systems.	5M
Q.2(A)	List and explain the UNIX Features and Environment.	10M

OR

Q.2(B)	Compare and contrast the Process utilities and Disk utilities.	10M

Q.3(A)	Explain the following with examples	
	i) Debugging shell scripts	5M
	ii) shell meta characters	5M

OR

Q.3(B)	List and explain the shell responsibilities in BASH.	10M

Q.4(A)	What is a deadlock? Explain necessary conditions for a deadlock to occur.	10M

OR

Q.4(B)	What are the completion times of processes P1, P2 and P3 using SRTF (Shortest Remaining Time First)?	10M

PID	AT	BT		
		CPU	IO	CPU
P1	0	1	2	2
P2	1	2	4	5
P3	2	3	6	8

Q.5(A)	Discuss the hardware support required to support demand paging.	10M

OR

Q.5(B)	Explain about FIFO, LRU page replacement algorithms with example.	10M

*** END***

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)
MCA I Year II Semester (R16) Supplementary End Semester Examinations - Jan' 2020
(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)	Define parameterized constructors. How to write them using C++? Give an example.	10M
	OR	
Q.1(B)	Write a C++ program to exchange the values between two classes using friend functions.	10M
Q.2(A)	What is polymorphism? How it is achieved at compile time and runtime? Explain both with the help of example.	10M
	OR	
Q.2(B)	Explain representation of array as an ADT along with their advantages and disadvantages.	10M
Q.3(A)	Explain the operations of Queue with an example.	10M
	OR	
Q.3(B)	Write a C++ program for converting infix to postfix expression.	10M
Q.4(A)	What is linked list? Write an algorithm for inserting an element E at the given position P of the linked list.	10M
	OR	
Q.4(B)	Explain in detail about hash function with collision resolution techniques.	10M
Q.5(A)	What is BST? Explain the operations of BST.	10M
	OR	
Q.5(B)	Sort the following list of elements by using insertion sort 35, 19, 66, 14, 8, 10, 57, 100	10M

*** END***