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MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)

MCA I Year II Semester (R14) Supplementary End Semester Examinations-January-2016
(Regulations: R14)

DATA STRUCTURES THROUGH C++

Time: 3Hrs

Max Marks: 60

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either I or II only.

- 1.(I) a) Write in detail on parameter passing methods available in C++ with an example. 12M
b) Write in detail on friend functions in C++ with an example.
- OR**
- 1.(II) a) Write in detail on access control features in C++ classes. 12M
b) Write in detail on dynamic memory allocation and deallocation in C++.
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- 2.(I) a) Compare function overloading with function templates in C++. 12M
b) Write in detail on virtual functions and runtime polymorphism with an example.
- OR**
- 2.(II) a) What are an ADT and an abstract class? How are they related? 12M
b) Write a C++ program to copy a text file into another using I/O streams and exception handling features.
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- 3.(I) Write a C++ template class to implement a stack with all operations. 12M
- OR**
- 3.(II) Write a C++ class to implement a singly linked list class with all operations. 12M
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- 4.(I) Write in detail on hash tables and their implementations. 12M
- OR**
- 4.(II) Write a C++ class to implement a doubly linked list with all operations. 12M
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- 5.(I) Write and explain a C++ program to implement quick sort method. 12M
- OR**
- 5.(II) Write a C++ program to create a binary search tree and traverse it in converse order. 12M

***** END*****

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(UGC-AUTONOMOUS)

MCA I Year II Semester (R14) Supplementary End Semester Examinations-January-2016

(Regulations: R14)

OPERATING SYSTEM

Time: 3Hrs

Max Marks: 60

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either I or II only.

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|-----------|-------------------------------------------------------------------------|-----|
| Q.1.(I) | a. What is virtual machine? Explain with neat diagram | 6 M |
| | b. Explain the following | |
| | i. System calls | 3 M |
| | ii. System programs | 3 M |
| OR | | |
| Q.1.(II) | a. Explain the different types of Operating system | 6 M |
| | b. Explain the following operating systems | |
| | i. Real time systems | 2M |
| | ii. Multi Programmed | 2 M |
| | iii. Time shared | 2 M |
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| Q.2.(I) | Define the features of UNIX. | 6 M |
| | Explain the UNIX structure and environment | 6 M |
| OR | | |
| Q.2.(II) | What is SED? Explain operations and commands of SED | 12M |
| <hr/> | | |
| Q.3.(I) | Explain the shell responsibilities and pipes in BASH | 12M |
| OR | | |
| Q.3.(II) | a. Explain the following with examples | |
| | i. Shell variables | 3 M |
| | ii. Command line editing | 3 M |
| | b. Explain the following in BASH | |
| | i. Command execution | 3 M |
| | ii. Command line editing | 3 M |
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| Q.4.(I) | Explain the technique of Dead lock Detection and recovery from deadlock | 12M |
| OR | | |
| Q.4.(II) | a. Write a Short note on Multiple Processor Scheduling Algorithm. | 6 M |
| | b. Describe Classic Problems of Synchronization. | 6 M |
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| Q.5.(I) | Explain the concept of demand paging and its performance | 12M |
| OR | | |
| Q.5.(II) | a. What is physical and logical address space | 6 M |
| | b. What is storage management? Explain the file access method briefly | 6 M |

*** END***