Subject Code: MC913

MCA I Semester [R09] Regular Examinations, January 2010

DIGITAL LOGIC AND COMPUTER SYSTEMS ORGANIZATION

Time: 3 Hours **Max Marks: 60**

Answer any FIVE questions All questions carry EQUAL marks

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1. a) Briefly discuss about Error detecting and Error correcting codes.
   b) Compare Veitch Karnaugh Map method and four variable Karnaugh map method.

2. a) Briefly discuss Open drain and Tri state gates.
   b) Explain synthesis of binary counters.

3. a) Explain about floating point division.
   b) Explain about combinatorial circuit for multiplication.

4. a) Explain in detail about instruction set and instruction format.
   b) Explain different addressing modes.

5. a) Explain the format of Micro instruction and also explain about fetch routine.
   b) Explain design of control unit.

6. a) Explain design and performance of Cache memory system.
   b) Explain how to enhance speed and capacity of memories.

7. a) Explain in detail about serial data communication.
   b) Explain Client-Server computing using LAN.

8. a) Explain RISC pipeline with an example.
   b) Explain about attached array processors.

Subject Code: MC117

MCA I Semester [R06] Supplementary Examinations, January 2010

OBJECT ORIENTED PROGRAMMING (THROUGH C++)

Time: 3 Hours **Max Marks: 60**

Answer any FIVE questions All questions carry EQUAL marks

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1. a) What is meant by object oriented programming?
   b) Differentiate between object oriented programming and procedure oriented Programming.

2.a) What do you mean by the term precedence? How does it help the programmer?
   b) Write a C++ program to swap the contents of two variables without using the temporary variable and arithmetic operators.

3 a) What is a constructor? What is the use of declaring a constructor member function in A program?
   b) Illustrate copy constructor with an example.

4. a) How is an assignment operator be overloaded?
   b) Illustrate the overloading of the operator new( ).

5. Write a program using multiple inheritance to get the data from two base classes and Display it using the derived class.

6 a) What are virtual base classes? How are they different from virtual functions?
   b) Illustrate multiple inheritance without using virtual classes.

7. What are file modes/ open mode bits? Describe different file modes with examples.

8 a) What are the design issues in exception handling?
   b) Illustrate catching of all types of exceptions with an example.

Subject Code: MC110

MCA I Semester [NR] Supplementary Examinations, January 2010

DATA STRUCTURES

Time: 3 Hours **Max Marks: 60**

Answer any FIVE questions All questions carry EQUAL marks

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1. a) Explain the use static in C with an example.
   b) Write algorithm to sort an array of integers in ascending order.

2. *Describe the operations on a singly linked list.*
   ***Traversing** the list*
   ***Inserting** a node into the list*
   ***Deleting** a node from the list*

3. a) Write functions for PUSH and POP operations done on a stack.
   b) Convert the following expression (A+B)*C/D+E^ F/G into postfix form.

4. Illustrate linked list implementation of a queue.

5. Write an algorithm for Quick Sort. Sort the following elements 96, 25, 41, 54, 63, 39, 78, 16.

6. Explain linear search with a linked list. Search for the 555 in the list 1, 255, 405, 495, 435, 499, and 555.

7. Write a C program for the INORDER, PREORDER, POSTORDER tree traversal techniques.

8. How is a threaded binary tree represented? How can we distinguish links from threads? What are the advantages of threaded binary tree?