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MANIPAL INSTITUTE OF TECHNOLOGY
 (Constituent Institute of Manipal University)
 MANIPAL-576104



FIRST SEMESTER B.E DEGREE ENDSEM EXAMINATION
PROBLEM SOLVING USING COMPUTERS (CSE-101/102)
 (REVISED CREDIT SYSTEM)

- Note:**
- 1. Answer any 5 full Questions**
 - 2. Answer to the point .**
 - 3. Missing data may be assumed suitably.**
 - 4. Answer the questions in the order of question number.**

- 1A. List and explain the various types of **ROM** memory. **3 Marks**
 1B. Explain the different symbols used in flowcharts **2 Marks**
 1C. Describe the various basic data types of C++. **2 Marks**
 1D. Define a variable. What rules are to be followed while naming variables. **3 Marks**

- 2A. In what order the operations in the following expression is carried out.
 Give all steps and final result also. **3 Marks**
 $9-12/(3+3)*(2-1)*5$

- 2B. The straight line method of computing the yearly depreciation of the value of an item is given by
 $D=(PurchasePrice - SalvageValue) / Years\ of\ Service.$
 Write a program to compute depreciation when PurchasePrice, SalvageValue and Years of Service are given. **3 Marks**

- 2C. Give the general format of else if ladder and switch statement along with its flowchart. **4 Marks**

- 3A. Write a program to
- (i) Accept the elements into a matrix **A** of order **m x n** and elements into a matrix **B** of order **p x q**
 - (ii) Display the matrices **A** and **B** in matrix form
 - (iii) Multiply the elements of the two matrices **A** and **B** and store it in matrix **C** and display the resultant matrix **C** in matrix form
- (1+1+3= 5 Marks)**

- 3.B. Write a C++ program to evaluate the following series up to **n** specified terms
 $x - x^3/3! + x^5/5! - x^7/7! + \dots \dots \dots n\ terms$ **5 Marks**

4A. Explain with syntax the built in string handling functions for performing the following operations.

- (i) Determining the length of the string
- (ii) Concatenating two strings.

4 Marks

4B. Write a C++ program to accept elements into a 1D array and sort the elements in descending order using bubble sort technique and display the same.

4 Marks

4.C. Differentiate between entry controlled and exit controlled loops with examples.

2 Marks

5a) Declare a structure **book** containing the following members: **authorname**, **pages** and **price**. Using **book** declare an array to store information about 3 books. Write a C++ program that will accept information for 3 books and display the same. 3 Marks

5b) Write a function to read elements into an array.

Write a function which takes as arguments the array name and size of the array and returns the average of all the elements of the array.

Use these two functions in the main appropriately to read and find the average.

Display the array elements and the average in the main program.

4 Marks

5c) Which of the bitwise operator retains its original value when it is applied on two operands having same value. Explain with example.

2 Marks

5d) List all the storage class of variables

1 Mark

6a) Create a class called **car** with member variables **colour**, **cost**, **year_of_manufacture**. Add member functions **getdetails** and **display**. **getdetails** is defined within the class, which takes all the information from the user. Another member function **display** is defined outside the class which displays all the information. Write a program to create an object of the class and invoke these functions in appropriate order.

4 Marks

6b) Explain the difference between the macros and functions

2 Marks

6c) Find the output of the following

main()

```
{  
    int a[] = {1,2,9,8,6,3,5,7,8,9};  
    int *p= a+1; int *q= a+6;  
    cout<< q-p <<*p+*q;}
```

2 Marks

6d) What are local and global variables.

2 Marks