

07002

MCA (Revised)
Term-End Examination
June, 2010

**MCS-011 : PROBLEM SOLVING AND
PROGRAMMING**

Time : 3 hours

Maximum Marks : 100

(Weightage 75%)

Note : Question Number 1 is compulsory. Attempt any three questions from the rest.

1. (a) Write a program in C to search a record in an existing file and to update it. 10
- (b) Explain the concept of array of pointers. 10
Using pointers write a program to test whether the given string is a palindrome or not.
- (c) Differentiate between :
 - (i) Various storage classes 6
 - (ii) Structure and union 4
- (d) Why C is called a middle level language ? 10
Give a flowchart to explain the program execution process. Explain each step in detail.

2. (a) Write a program to search an element in a given list of elements using linear search. 8
- (b) Write a recursive program to calculate the factorial of a given number. 8
- (c) Give an example to explain null pointer assignment. 4
3. (a) Write a program in C to find the multiplication of 2 matrices of size (3×3) . 5
- (b) Write a macro for the following : 4x2=8
- (i) to find largest number among 3 given numbers.
- (ii) to find cube of a given number.
- (c) Write a program in C, using structures to generate a report for students which displays Roll No. and Name of student, total marks obtained by the student. Assumptions can be made wherever necessary. 7
4. (a) Write a program and flowchart to display the following pattern : 8
- H
- He
- HeL
- HeLL
- HeLLO
- HeLL
- HeL
- He
- H

- (b) Write a macro to demonstrate : 6
#define, #if, #else
preprocessor commands.
- (c) Write a program in 'C' to find 6
 $1^2 + 3^2 + 5^2 + 7^2 + 9^2 + \dots + N^2$
5. (a) Write a program to append the contents of 7
second file to the contents of first file.
- (b) Explain the difference between a top-down 5
approach and a bottom-up approach in
programming.
- (c) What do you understand by a decision- 8
control statement ? Give an example of
each.
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