



I Semester M.C.A. Examination, January 2017  
(CBCS)  
MCA – 101 T : COMPUTER SCIENCE  
Problem Solving Techniques Using C

Time : 3 Hours

Max. Marks : 70

**Instruction :** Answer **any five** questions from Section – A and **any four** questions from Section – B.

SECTION – A

I. Answer **any five** of the following questions. Each carries **6** marks. (5×6=30)

- 1) Define flowchart. Explain the basic symbols used to draw a flowchart. Write a flowchart to find largest of three numbers.
- 2) Why C is called a structured programming language ? Write the structure of a C program.
- 3) Write a C program to find the sum of the following series  
$$1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5} + \dots + \frac{1}{n}$$
- 4) Write a C program to add two matrices of size m×n.
- 5) Write in brief the storage classes.
- 6) Given student\_no as integer, name as string of 20 characters, marks scored as float. Write a program to accept 100 students details.
- 7) Explain how error handling is performed during file input/output operation.
- 8) What is dynamic memory allocation ? Write syntax for malloc ( ) and calloc ( ). Explain the difference between them.

P.T.O.



## SECTION – B

- II. Answer **any four** full questions. **Each** carries **10** marks. **(4×10=40)**
- 9) a) Explain formatted and unformatted input-output functions in C with examples. 7  
b) List out atleast six format specifiers used in C. 3
- 10) a) Explain different datatypes available in C with its types. 6  
b) What is looping ? Give the syntax of all types of looping constructs. 4
- 11) a) Define pointer variable. How is it different from normal variable ? Explain. 4  
b) Write a C program to sort 5 names using array of pointers. 6
- 12) Write a C program to read data from a file and write it in another file. Also count the no. of characters in the file. 10
- 13) a) Define function. Explain types of function. 5  
b) Write a C program using recursive function to find factorial of a number. 5
- 14) Write short notes on : **(2½×4=10)**
- 1) Command line arguments.
  - 2) Type conversion.
  - 3) Bitwise operators.
  - 4) Enumerated datatypes.
-