

No. of Printed Pages : 4

MCS-011

**MASTER OF COMPUTER
APPLICATIONS/BACHELOR OF
COMPUTER APPLICATIONS
(REVISED) (MCA/BCA)
Term-End Examination
June, 2025**

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

Time : 3 Hours

Maximum Marks : 100

Weightage : 75%

Note : (i) *Question No. 1 is compulsory.*

(ii) *Answer any **three** questions from the rest.*

1. (a) Write an algorithm and draw a corresponding flowchart to accept 'n' numbers from user and calculate their sum. 10

A-36/MCS-011

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- (b) Write a function in C to generate numbers between the given range. 6
- (c) Write a program in C to print the Fibonacci series upto 'n' terms. 10
- (d) Explain the use of pointers with an example C program. 10
- (e) What is logical error in C ? Give an example of it. 4

2. Differentiate the following with examples :

$$4 \times 5 = 20$$

- (i) Break *vs.* Continue
- (ii) While loop *vs.* Do---while loop
- (iii) Call by value *vs.* Call by reference
- (iv) Sequential Access *vs.* Random Access

3. (a) Write a C program to add two matrices A, B of size (3×3) and store the sum in matrix C. 10
- (b) Explain the following variables with an example for each : 10
- (i) Automatic
 - (ii) Extern
 - (iii) Static
 - (iv) Register
4. (a) Write a program to find out square and cube of a given number using macros. 8
- (b) Discuss dynamic memory allocation in C. Write and explain any *two* dynamic allocation functions of C. 6
- (c) Write *two* differences between a structure and a union with appropriate examples. 6

5. (a) Write a program to generate the following pattern : 8

A B C D E

A B C D

A B C

A B

A

- (b) Write a program to concatenate two strings (without using `strcat()` in-built function). 7
- (c) Explain the use of “`typedef`” statement. Give an example. 5

x x x x x