

Roll No:

MCA-III  
(SEM I) THEORY EXAMINATION 2021-22  
PROGRAMMING IN C

Time: 3 Hours

Total Marks: 70

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt all questions in brief. 2\*7 = 14

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|----|--|
| a. | Briefly differentiate between While and do-While loop. |
| b. | Differentiate between local and global variable.       |
| c. | Explain type conversion in C.                          |
| d. | Mention any two advantages of using functions in C.    |
| e. | Discuss the advantages of algorithm.                   |
| f. | Compare and contrast between compiler and interpreter. |
| g. | Mention the rules for variable naming in C.            |

SECTION B

2. Attempt any three of the following: 7\*3 = 21

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|----|--|
| a. | Draw a flowchart and write the algorithm for finding GCD of two numbers.   |
| b. | Write a program in C to calculate the sum of digits of a 3 digit number using arithmetic operators. (Note: No loop should be used) |
| c. | Write a Program to print the following pattern.<br><br>*<br>***<br>*****<br>*****  |
| d. | Write a program in C to print all Armstrong numbers from 1 to 500.   |
| e. | Explain the call-by-value mechanism by using suitable example.   |

SECTION C

3. Attempt any one part of the following: 7\*1 = 7

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|----|--|
| a. | What is a Computer? Draw a block diagram of a Computer and explain each of its components. |
| b. | Describe the various problem solving techniques.   |

4. Attempt any one part of the following: 7\*1 = 7

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|----|---|
| a. | What are various data types used in C language? Illustrate their declaration and usage. |
| b. | Explain the standard input/output functions in C.                                       |



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5. Attempt any *one* part of the following: 7\*1 = 7

- |    |   |
|----|---|
| a. | Explain the role of precedence and associativity of an operator? Solve the expression based on operator precedence: $1+2*3/6-4$ |
| b. | Explain logical operators with examples.  |

6. Attempt any *one* part of the following: 7\*1 = 7

- |    |   |
|----|---|
| a. | Write a C program to find the roots of a quadratic equation using switch statement.   |
| b. | Write a C program which reads 2 integer numbers and an operator and finds their sum, difference, multiplication and division separately based on the value of operator entered. |

7. Attempt any *one* part of the following: 7\*1 = 7

- |    |   |
|----|---|
| a. | Write a C program using a function <code>prime_check()</code> , to check whether a given number is prime. The function returns 1 if the number is prime or 0 otherwise. |
| b. | Explain the purpose of storage classes? Explain all storage classes with suitable examples.   |

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