



JAQ-1603220001030300 Seat No. _____

B. Sc. (Bioinformatics) (Sem. III) (CBCS) Examination

November - 2019

BI - 303 : Programming in C
(New Course)

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- 1 (A) Answer the following short question : 4
- (1) _____ represents problem solution step by step in descriptive format.
 - (2) A _____ is a graphical or symbolic representation of a process of a problem solution.
 - (3) Which symbol is used to represent decision making statement in flowchart?
 - (4) Many programmers use _____ to plan out the implementation of an algorithm before converting to the more technical task of coding.
- (B) Answer any **one** of the following question : 2
- (1) Write down the advantages of flowchart.
 - (2) Define pseudo code.
- (C) Answer any **one** of the following question : 3
- (1) Draw the flowchart to find simple interest for a given principal amount, rate of interest and number of years. (Formula for Simple Interest = (Principal_Amount * Rate_of_Interest * Number_of_years)/100
 - (2) Write an algorithm to find whether a given number is a prime number or not.
- (D) Answer any **one** of the following question : 5
- (1) What is algorithm? Write an algorithm for addition of two numbers and displaying the sum.
 - (2) What is a C program? List and explain the programming techniques.

- 2 (A) Answer the following short question : 4
- (1) How many keywords are there in C language?
 - (2) Which format specifier is used to print a value of double data type?
 - (3) && is _____ operator.
 - (4) Who developed C language?
- (B) Answer any **one** of the following question : 2
- (1) Explain basic data types available in C.
 - (2) Explain conditional operator with example.
- (C) Answer any **one** of the following question : 3
- (1) Explain data type conversion in C.
 - (2) Write a short note on different expressions in C with examples.
- (D) Answer any **one** of the following question : 5
- (1) Write in detail about the history of C language.
 - (2) Explain logical and relational operators with suitable example.
- 3 (A) Answer the following short question : 4
- (1) Which statement is used to skip the looping statements in between?
 - (2) Which is the default storage class specification of variable?
 - (3) Initialization, condition and increment/decrement are written in the same statement in _____ loop.
 - (4) Built-in String handling functions are included in _____ header file.
- (B) Answer any **one** of the following question : 2
- (1) Differentiate call by value and call by reference.
 - (2) Explain while loop syntax.

- (C) Answer any **one** of the following question : 3
- (1) Write a C program to print the following pattern.
- ```

1 2 3 4 5
2 4 6 8 10
3 6 9 12 15
4 8 12 16 20
5 10 15 20 25

```
- (2) Explain nested if with suitable example.
- (D) Answer any **one** of the following question : 5
- (1) Explain switch case with example.
- (2) Write a C program to find the reverse of a given three digit number. [Eg. no=235, reverse=532]
- 4 (A) Answer the following short question : 4
- (1) What is a structure in C?
- (2) What is the value of a[3] if the array elements are a[] = {11,12,13,14,15}; ?
- (3) Number of bytes in memory occupied by the below union block is?
- ```

union user
{
    int rollno;
    char name[10];
};

```
- (4) Array is a collection of elements of different types. True or False?
- (B) Answer any **one** of the following question : 2
- (1) Write down the syntax for the declaration of two dimensional (2D) character arrays.
- (2) What is structure?
- (C) Answer any **one** of the following question : 3
- (1) Explain union with proper syntax and example.
- (2) Write a program to create structure "Book" with the members of the structure as book_id, book_name and book_price. Allow the user to enter values for three books and print all the three books details.

- (D) Answer any **one** of the following question : 5
- (1) Write a program to sort 10 array elements in ascending order.
 - (2) Explain 1D and 2D integer array with suitable example.
- 5 (A) Answer the following short question : 4
- (1) Which function is used to read a single character from file in C?
 - (2) A _____ represents a sequence of bytes on the disk where records of related data are stored.
 - (3) Which function is used to reallocate the memory in C?
 - (4) In which mode file can be opened for writing and reading both?
- (B) Answer any **one** of the following question : 2
- (1) What is pointer arithmetic?
 - (2) List various file opening modes available in C.
- (C) Answer any **one** of the following question : 3
- (1) Write a program to allocate memory of 5 integer array elements at run-time.
 - (2) Write a note on malloc() and calloc() with example.
- (D) Answer any **one** of the following question : 5
- (1) What are Pointers? Mention the advantages of pointers in C.
 - (2) Explain the importance of file handling in C. Define any three functions used in file handling in C.
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