2022

BCA (Hons)

B.Sc. First Semester End Examination - 2022

PAPER - C1T

Programming Fundamentals using C and C++

Full Marks : 40   *Time : 2 hours*

The figures in the right-hand margin indicate marks.
Candidates are required to give their answers in their own
words as far as practicable.
Illustrate the answers wherever necessary.

Group-A

1. **Answer any five questions of following :-**   **5×2=10**

a.   State the difference between calloc() and malloc().

b.   What is macro in C?

c.   What is the use of copy constructor?

d) What do you mean by void pointer?

e) Write down the basic criteria of recursion.

f) What do you mean by encapsulation in C++?

g) What is friend function?

h) Find the output :

```
int main()
{
int a,b;
a=b=4;
b=a++;
printf("%d %d, a++, --b);
```

Group - B

Answer any four questions :   **5×4=20**

2. a) What is the difference between while-loop and do-while loop?

b) Find the output of the following :

```
int main()
{
int a[3]={10,20,30];
int *t;
t=a;
printf("%d" *(t+1));
}
```

3. Write a C-program to check whether a number is palindrome or not using function.   5

4. (a) What is the difference between array of pointer and pointer to an array?

(b) What do you mean by static variable?

5. a) What is polymorphism?

b) Give an example of function ploymorphism.   2+3

6. a) What do you mean by derived data types? Give an example.

b) Write a C program to implement sum of two 2×2 matrices.   1+4

7. a) What is inheritance?

    b) State different types of inheritance in C++ with examples.   1+4

Group - C

Answer any one question.   **10×1=10**

8. a) What are the differences between OOP and procedure oriented programming?

    b) What is the operator overloading? What type of operators can not be overloaded?

    c) Write a C++ program to find the factorial of any integer using class.

9. a) State the working principle of "for" loop structure in C language.

    b) Write a C program to display the sum of digits of an integer.

    c) Distinguish structure and union with an example.

                                                         2+6+2