

B.Sc. (Honours) Examination, 2018
Semester-I (CBCS)
Computer Science
Course : CC-1 (Theory)
(Programming Fundamental Using C/C++)

Time : 3 Hours

Full Marks : 40

Questions are of value as indicated in the margin

Answer **any five** questions from the following:

1. What are the outputs of the following programs:

- a)

```
#include <iostream >
using namespace std;
int sub(int a, int b = 10)
{
    int result;
    result = a - b;
    return result;
}
int main()
{
    int a = 200;
    int b = 100;
    int result;
    result = sub(a, b);
    cout << " value1 : " << result;
    result = sub(a);
    cout << " value2 : " << result;
    return 0;
}
```
- b)

```
main()
{
    int m = 5;
    if (m < 3) printf("%d", m++);
    else if (m < 5) printf("%d", ++m);
    else if (m < 7) printf("%d", m + 1);
    else printf("%d", ++m);
}
```
- c)

```
main()
{
    int i, j, n = 5;
    for (i = 1; i < n; i++);
        for (j = 1; j < i; j++)
            printf("%d", i + j);
}
```

(2)

```
d) main()
{
    int n;
    for (n = 1; n < 5; n++)
        printf("%d\n", (n%2)?n%2==1:n%2==0);
}
```

4×2=8

2. a) Explain different forms of if statement depending on the complexity of conditions to be tested.
 - b) Write the general syntax of for loop. How can we use for loop when the number of iterations is not known?
 - c) Write the functions of break and continue. 4+2+2=8
 3. a) How does a structure differ from an array?
 - b) Write a program to sort n numbers in ascending order by using function and dynamic memory allocation.
 - c) What is the function of typedef? 3+4+1=8
 4. a) Explain static memory allocation and dynamic memory allocation.
 - b) Write a C program to multiply two matrices by using function and dynamic memory allocation. 3+5=8
 5. a) Explain iterative function and recursive function with examples.
 - b) "main() is a user-defined function." State whether the given statement is True or False. Justify your answer. 6+2=8
 6. a) Explain the roles of $a++$ and $++a$.
 - b) A friend function can not be used to overload the assignment operator =. Explain why?
 - c) Distinguish the following:
 - i. global and local variables
 - ii. auto and static variables 2+2+4=8
 7. a) What is a friend function? What are the merits and demerits of using friend function?
 - b) Describe the importance of destructor. Explain its use with the help of an example. 4+4=8
 8. a) Explain different forms of inheritance.
 - b) What is operator overloading? Write down the rules for overloading operators. 5+3=8
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