TBC–102/TBD–102

B. C. A./B. C. A. (DS & AI)
(FIRST SEMESTER) MID SEMESTER
EXAMINATION, Oct., 2023

FOUNDATIONS OF COMPUTER PROGRAMMING

Time : 1½ Hours

Maximum Marks : 50

Note : (i) Answer all the questions by choosing any *one* of the sub-questions.

(ii) Each sub-question carries 10 marks.

1. (a) (i) Explain basic structure of a C program.

(ii) Write a C program to read room temperature T from user and print the room temperature in Fahrenheit.

(CO1)

P. T. O.

OR

(b) (i) Write a note on relational operators in C.

(ii) What will be the output of the following C code ?

```
#include <stdio.h>
int main(void)
{
    int i = 10 > 9 > 7 < 8;
    printf("%d", i);
    return 0;
}                                    (CO1)
```

2. (a) What is branching statement in C ? Explain various types of if-else statement with syntax and example.   (CO1)

OR

(b) Consider three distinct numbers num1, num2, num3. Write a C program to take input from user and print largest number of three numbers using ternary operator.

(CO2)

3. (a) (i) What is the difference between break and continue statement in C ?

   (ii) What is the output of the following code ?   (CO1)

```
#include <stdio.h>
  int main()
  {
     printf("before continue");
     continue;
     printf("after continue\n");
  }
```

OR

(b) What is the output of following codes ?

   (i)
```
#include <stdio.h>
int main()
{
   int i = 0;
   int x = i++, y = ++i;
   printf("%d % d\n", x, y);
   return 0;
}
```

(ii) #include <stdio.h>
     void main()
     {
         int x = 4, y, z;
         y = --x;
         z = x--;
         printf("%d%d%d", x, y, z);
     }   (CO2)

4. (a) (i) Explain different types of type casting in C.

     (ii) What will be the output of following code ?
     #include <stdio.h>
     int main()
     {
         int a = 15, b = 2;
         char x = 'a';
         double div;
         div = (double)a/b;
         x = x + 3;
         printf(" %c\n", x); d
         printf(" %f", div); 7.5
         return 0;
     }   (CO2)

OR

(b) (i) What is the difference between while and do---while loop in C ?

(ii) Write a C program to reverse a number.   (CO2)

5. (a) Write a C program to check if a year is leap year or not.   (CO1, CO2)

OR

(b) Write short notes on the following :

(i) #define

(ii) #include

(iii) Goto   (CO1, CO2)