Roll No. ……..

BCA–02/DIT–06

Introduction to Computer Programming Using C

Bachelor of Computer Application/Diploma in Information Technology

First Semester, Examination, 2018

Time : 3 Hours **Max. Marks : 80**

Note : This paper is of **eighty (80)** marks containing **three (03)** Sections A, B and C. Attempt the questions contained in these Sections according to the detailed instructions given therein.

Section–A

(Long Answer Type Questions)

Note : Section 'A' contains four (04) long answer type questions of nineteen (19) marks each. Learners are required to answer *two* (02) questions only.

1. Answer the following :

   (a) The current year and the year in which the employee joined the organization and entered through the keyboard. If the number of years for which the employee has served the organization is greater than 3, then a bonus of ₹ 2,500 is given to the employee. If the years of service are not greater than 3, then the program should do nothing.

(b) Write a program to calculate the salary as per the following table :

Gender	Years of Service	Qualifications	Salary
Male	> = 10	Post-Graduate	15000
	> = 10	Graduate	10000
	< 10	Post-Graduate	10000
	< 10	Graduate	7000
Famale	> = 10	Post-Graduate	12000
	> = 10	Graduate	9000
	< 10	Post-Graduate	10000
	< 10	Graduate	6000

2. Answer the following questions :

(a) What is File Handling ? Write a program of opening, reading, writing and closing operation on file.

(b) Given three variables x, y, z write a function to circularly shift their values to right. In other words if x = 5, y = 8, z = 10 after circular shift y = 5, z = 8, x = 10 after circular shift y = 5, z = 8 and x = 10. Call the function with variables a, b, c to circularly shift values.

3. Answer the following questions :

(a) See the following program of automatic storage class. Write its output :

```
main ()
{
auto int i = 1;
{auto int i = 2;
        {
auto int i = 3;
printf ("\n%d", i) ;
        }
printf ("%d", i) ;
        }
printf ("%d", i);
}
```

(b) Discuss the different types of storage classes in C differentiating between them with example.

4. Answer the following questions :

(a) Write a C program to create a text file named as "text.txt" and write "hello world" in the created file using your C program.

(b) Discuss procedure of function call by value and call by reference using an example of each.

Section–B

(Short Answer Type Questions)

Note : Section 'B' contains eight (08) short answer type questions of eight (8) marks each. Learners are required to answer *four* (04) questions only.

1. What is the difference between flow chart and algorithm ? Explain.
2. Explain typedef and how can it be used for real world problem solving ?
3. What are the different elementry data type of C language ? Explain.
4. Write a program to find if a square matrix is symmetric ?
5. Explain Dynamic memory allocation and differentiate between calloc ( ) and malloc ( ).
6. While using the statement :

   f_p = fopen ("myfile.c", "r") ;

   What happens if ?

   – 'myfile.c' does not exist on the disk

   – 'myfile.c' exists on the disk

7. What is the purpose of the library function fflush( ) ?
8. There are 100 records present in a file with the following structure :

```
struct data
{
int d, m, y;
};
struct employee
{
```

```
int empcode[6];
char empname [20];
struct date join_date;
float salary;
};
```

Write a program to read these records, arrange them in ascending order of join_date and write them in to a target file.

Section–C

(Objective Type Questions)

Note : Section 'C' contains ten (10) objective type questions of one (01) mark each. All the questions of this section are compulsory.

1. What is the output of this C code ?

```
int main( )
{
int i = -5;
int k = i%4;
printf("%d/n", k);
}
```

(a) Comile time error

(b) –1

(c) 1

(d) None of these

2. What is the type of the below assignment expression if x is of type float, y is of type int ?

   y = x + y;

   (a) int
   (b) float
   (c) There is no type for an assignment expression
   (d) double

3. What is the output of this C code ?

```
int main ()
{
int a = 0, i = 0, b;
for (i = 0; i < 5; i++)
{
a++
 continue;
  }
}
```

   (a) 2
   (b) 3
   (c) 4
   (d) 5

4. What is the output of this C code ?

```
void main( )
{
  int k = 0;
  for (k < 3; k++)
  printf( " Hello " );
}
```

(a) Compile time error

(b) Hellow is printed thrice

(c) Nothing

(d) Varies

5. Longevity of a variable refers to :

(a) The duration for which the variable retains a given value during the execution of a program

(b) The portion of a program in which the variable may be visible.

(c) Internal linkage of a variable.

(d) External linkage of a variable

6. extern int s;

int t;

static int u;

main( )

{

}

which of s, t and u are available to a function present in another file ?

(a) only s

(b) S & u

(c) S, t, u

(d) None of these

7. Which of the following statements are correct ?

(i) The value stored in the CPU register can always be accessed faster than that stored in memory.

(ii) A register storage class variable will always be stored in a CPU register.

(a) Only I is correct

(b) Only II is correct

(c) Both I and II are correct

(d) Both I and II are incorrect

8. A function cannot be defined inside another function.

(a) True

(b) False

9. If return type for a function is not specified, it defaults to int.

(a) True

(b) False

10. Functions can be called either by value or reference.

(a) True

(b) False