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44 (1) INCP/BCA-HC-1016

2021

(Held in 2022)

INTRODUCTION TO C PROGRAMMING

Paper : BCA-HC-1016

Full Marks : 80/60

Time : Three hours

The figures in the margin indicate full marks for the questions.

For CBCS students ***only two*** questions are to be answered from Q. No. **6**.

1. Write the following terms with suitable example. ***(any five)*** 2×5=10
 - ✓(a) Syntax of declaring and accessing elements of an array.
 - ✓(b) Function definition, function call and function prototype.
 - ✓(c) Pointer Declaration and Definition.
 - ✓(d) Syntax of for loop.
 - (e) Syntax of structure definition and accessing structure variable through data operator.
 - ✓(f) Opening and closing a file.

Contd.

✓ 2. Differentiate the following with suitable example : $2 \times 5 = 10$

- ✓ (a) While and do-while loop.
- ✓ (b) Call by reference and call by value.
- ✓ (c) Recursive and non-recursive functions.
- ✓ (d) Arrays and structures.
- ✓ (e) Binary file and Text file.

3. What will be the output of the following program segment? (Assuming no syntax error) $2 \times 5 = 10$

(a) If $x = 3$, $y = 0$ and $z = -4$, what is the value of the following expression?

(i) $x \& \& y \parallel z$

(ii) $x \parallel y \& \& z$

✓ (b)

```
for (int x = 1; x <= 20; x++)
printf ( "% d /_n " , x );
```

✓ (c)

```
for (int x = 1; x <= 20; x++)
{
    for (int y = 1; y <= 5; y++)
        printf ( " % d " , x );
    printf ( " /_n " );
}
```

✓(d) Given the following declaration :

```
int a = 5 ;
```

```
int b = 7 ;
```

```
int * p = &a ;
```

```
int * q = &b ;
```

what is the value of each of the following expression ?

(i) ++a (ii) ++(*p)

✓(e) for (int x = 12; x < 7; x - 1)

```
printf ("%d\n", X);
```

4. Answer the following : **(any three)** 4×3=12

(a) What do you mean by two dimensional array? State some situations that can easily be represented by these.

✓(b) Distinguish between variables and keywords.

✓(c) Write a program in C to generate factorial of a number.

✓(d) What do you mean by precedence of operators in C? Explain with example.

✓5. Print out the errors, if any in the following C statements. Also give proper justification.

1×8=8

(a) int x = 10 ;

(b) printf (a);

- (c) `int a, b;`
`scanf ("% f % f", & a, & b);`
- (d) `int a, p;`
`p = & a;`
- (e) `X = (a + b) ÷ (a - b);`
- (f) `while (z ≥ 0)`
`sum + z = z;`
- (g) `int sum, (int x, y);`
- (h) `fun (void);`

6. Write C program for the following :

$$5 \times 6 = 30$$

- (i) Write a program to sort elements of an array.
- (ii) Write a program to check wheather a number is perfect or not.
- (iii) Write a program to add a 2×2 matrix.
- (iv) Write a program to swap two numbers using function.
- (v) Write a program to find the roots of a quadratic equations.
- (vi) Write a program to read a string and count the number of vowels present in the string.