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(6th Semester)

MATHEMATICS

Paper : MATH-364 (A)

(Computer Programming in C)

Full Marks : 55

Time : 2½ hours

(PART : A—OBJECTIVE)

(Marks : 20)

The figures in the margin indicate full marks for the questions

SECTION—A

(Marks : 10)

Tick (✓) the correct answer in the brackets provided :

1×10=10

1. If a is an integer variable, $a \frac{5}{2}$ will return a value

(a) 2.5 ()

(b) 3 ()

(c) 2 ()

(d) 0 ()

2. What will be the output of the following arithmetic expression?

$$\frac{3}{2} \ 4 \ \frac{3}{8} \ 3$$

(a) 0 ()

(b) 3 ()

(c) 5 ()

(d) 7 ()

3. The break statement is used to exit from

- (a) an IF statement ()
- (b) a FOR loop ()
- (c) a program ()
- (d) the main() function ()

4. What will be the output of the following?

```
int a=1;
printf(“%d%d%d\n”, a, ++a, a++);
```

- (a) 3 3 1 ()
- (b) 1 2 2 ()
- (c) 1 3 3 ()
- (d) 2 2 1 ()

5. Which of the following is the correct way of declaring a float pointer?

- (a) float ptr ()
- (b) float*ptr ()
- (c) *float ptr ()
- (d) float ptr* ()

6. Which one of the following is correct?

- (a) int marks[10, 10]; ()
- (b) float marks{20}; ()
- (c) int marks[10]; ()
- (d) float marks{20, 10}; ()

7. Which of the following is not true?

- (a) Function definition defines the body of the function ()
- (b) Pointers are variables which hold the addresses of other variables ()
- (c) A function can be called either by value or by reference ()
- (d) Pointers cannot be used to make a function return more than one value simultaneously ()

8. An array is a collection of

- (a) different data types scattered throughout memory ()
- (b) the same data type scattered throughout memory ()
- (c) the same data type placed next to each other in memory ()
- (d) different data types placed next to each other in memory ()

9. strlen("Thank you") will return

(a) 7 ()

(b) 8 ()

(c) 9 ()

(d) 10 ()

10. If an integer is to be entered through the keyboard, the function to use is

(a) scanf() ()

(b) gets() ()

(c) getche() ()

(d) getchar() ()

SECTION—B

(Marks : 10)

Answer the following questions :

2×5=10

1. Write the general form of FOR loop.
2. Write the general form of switch statement.
3. What is a pointer? Write two advantages of a pointer.
4. Explain in brief strcmp() and strcat() functions.
5. Write a function which receives a float and an int from main(), then find the product of these two and return the product which is to be printed through main().

(PART : B—DESCRIPTIVE)

(Marks : 35)

The figures in the margin indicate full marks for the questions

1. (a) Evaluate the expression

$$g = \text{big}/2 + \text{big}^*4/\text{big}-\text{big}+\text{abc}/3$$

taking abc = 2·5, big = 2, where g is float variable.

3

(b) Convert the equation $w = \frac{(1-x^2)yz}{1-x}$ into corresponding C statement. 2

- (c) What will be the output of the following C program? 2

```
#include<stdio.h>
int main()
{
    int n=5, r=7, p;
    p=n/r;
    printf("%d", p);
    return 0;
}
```

OR

Explain in brief constants, variables and keyword in C. Also explain in brief the rules for constructing integer and real constants, and the rules for constructing variable names. 7

2. Write the general form of if-else statement. Write a program to find the largest of three given real numbers using if-else statement. 2+5=7

OR

What are the three types of loops available in C? Write two programs to find the factorial of a positive integer using any two of these loops. 1+3+3=7

3. State four storage classes in C. Explain all of them in brief. 1+6=7

OR

What is an array? Write a program to multiply two matrices. 2+5=7

4. Write short notes on any *two* of the following : 7

- (a) Pointer to array
- (b) Operation on pointers
- (c) Pointers and multidimensional array

OR

What is union? Illustrate it with an example. 7

5. Explain the function fgets() and fputs() and write a program to illustrate these two functions. 7

OR

Explain the function rewind() and fseek(). Write any four different operations that can be carried out on a file. 3+4=7

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