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42 (1) PRIC

2021
(Held in 2022)

PROGRAMMING IN C

Paper : 1·2

Full Marks : 70

Time : Three hours

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

1. Answer the following questions : $1 \times 5 = 5$

- (a) What is Programming Language ?
- (b) What is Machine Level Language ?
- (c) What is the size (in bytes) of a double variable in C ?
- (d) What is null pointer ?
- (e) What is typedef ?

Contd.

2. Answer the following questions : (*any five*)
2×5=10

- (a) What are the basic data types of C Language ?
- (b) What do you mean by formatted I/O ?
- (c) What is 2-Dimensional array ? Explain with example.
- (d) What is increment operator ? Give example.
- (e) Write the differences between while loop and do-while loop.
- (f) Write the differences between Compiler and Interpreter.
- (g) Write the differences between array and pointer.

3. Answer *any five* questions : 3×5=15

- (a) What is Flowchart ? Draw a flowchart to display the biggest of three numbers.
- (b) What is string ? Write the usage of the following string handling functions — `strlen()` and `strrev()`.
- (c) What is array ? How 2-Dimensional arrays are initialised ? Explain with example.

(d) Write the output of the given C-code
main ()

{

int p=5, q=7, r

p++ ;

p = 6

q++

q = 8

r=p% 2 ;

r = 0

r++ ;

r = 1

printf ("%d %d %d", ++p, q++, r) ;

7, 8, 1

}

- (e) What is void pointer ? Explain pointer arithmetic.
- (f) What is structure ? How structures are initialized ?

Answer the following questions :

- (a) What is function ? What is function prototype ? What is call-by-value in parameter passing ?

1+2+2=5

OR

Explain the working mechanism of a recursive function with a suitable example.

- (b) What is file pointer ? Explain various modes of opening a text file.

2+3=5

- (c) Write the usage of the given C-library functions — 5
getc (), strcat (), sqrt (), putc () and
tolower ()

4. Answer the following questions : **(any five)**
5×5=25

✓ (a) WAP to check whether a number is Armstrong or not.

✓ (b) WAP to display the transpose of a square matrix.

(c) Write a program to concatenate two strings without using strcat () library function.

✓ (d) WAP to check whether a number is prime or not.

✓ (e) WAP to compute the factorial of a number using recursive function.

(f) WAP to copy a text file to another file.

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***The figures in the margin indicate
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1. Answer the following questions : $1 \times 5 = 5$

(a) Size of a character variable is
_____ byte.

(b) What is Machine Level Language ?

(c) What is *typedef* ?

(d) What is void pointer ?

(e) What is ternary operator ?

Contd.

2. Answer the following questions : **(any five)**
 $2 \times 5 = 10$

- (a) Write the differences between Compiler and Interpreter.
- (b) What is implicit type conversion? Explain with example.
- (c) What is 2-Dimensional array? How 2-Dimensional arrays are initialized?
- (d) Write the differences between *while* loop and *do-while* loop.
- (e) Write the differences between array and structure.
- (f) Write the name of the header file used for `strcat()` and `sqrt()` library function.

3. Answer the following questions : **(any five)**
 $3 \times 5 = 15$

- (a) What is Flowchart? Draw a Flowchart to display the maximum of four integers.
- (b) What is pointer arithmetic? Explain with example.

(c) Write the output of the given code

```
int main()  
{  
    int n;  
    for(n=10; n!=0; n--)  
        printf("\n %d", n--);  
    return 0;  
}
```

10 9 8 7 6 5 4 3 2 1

(d) What is structure? How the members of a structure can be accessed?

$$1+2=3$$

(e) What is unary operator? Explain increment and decrement operator with example.

(f) What is data type qualifiers? Explain with example.

4. Answer the following questions :

(a) Write the usage of the given C library functions— `getc()`, `strcmp()`, `tolower()`, `gets()`, `putchar()`

5

(b) What is function argument? What do you mean by actual and formal arguments? Explain with example.

$$1+4=5$$

- (c) What is File pointer ? Explain various modes of opening a text file. $2+3=5$

OR

What is recursion ? Write the differences between recursion and iteration.

5. Answer the following questions : *(any five)*
 $5 \times 5 = 25$

✓ (a) WAP to check whether a number is prime or not

✓ (b) WAP to multiply two matrices

(c) WAP to remove an element from an integer array

(d) WAP to copy a text file to another file

(e) WAP to check whether a number is perfect or not

✓ (f) WAP to display the digits of a number using words (i.e. Number 123 should be displayed as one two three).