



Maratha Vidya Prasarak Samaj's

Rajarshi Shahu Maharaj Polytechnic, Nashik

Udoji Maratha Boarding Campus, Near Pumping Station, Gangapur Road, Nashik-13.

Affiliated to MSBTE Mumbai, Approved by AICTE New Delhi, DTE Mumbai & Govt. of Maharashtra, Mumbai.

*Subject: - C Programming
Language (22218)*



SYLLABUS

Chapter No.	Name of chapter	Marks
1	Overview of C Programming	10
2	Decision Control and Loop Control	12
3	Arrays and Strings	16
4	Functions	12
5	Pointers	10
6	Structure	10
Total Marks: -		70



Maratha Vidya Prasarak Samaj's

Rajarshi Shahu Maharaj Polytechnic, Nashik

Udoji Maratha Boarding Campus, Near Pumping Station, Gangapur Road, Nashik-13.

Affiliated to MSBTE Mumbai, Approved by AICTE New Delhi, DTE Mumbai & Govt. of Maharashtra, Mumbai.

BOARD THEORY PAPER

PATTERN

FOR CPR (22218)

Q.1		Attempt any FIVE	5*2=10
	a)	Overview of C Programming	
	b)	Decision Control and Loop Control	
	c)	Decision Control and Loop Control	
	d)	Functions	
	e)	Pointers	
	f)	Pointers	
	g)	Structures	
Q.2		Attempt any THREE	3*4=12
	a)	Overview of C Programming	
	b)	Decision Control and Loop Control	
	c)	Arrays and Strings	
	d)	Functions	
Q.3		Attempt any THREE	3*4=12
	a)	Overview of C Programming	



Maratha Vidya Prasarak Samaj's
Rajarshi Shahu Maharaj Polytechnic, Nashik

Udoji Maratha Boarding Campus, Near Pumping Station, Gangapur Road, Nashik-13.
Affiliated to MSBTE Mumbai, Approved by AICTE New Delhi, DTE Mumbai & Govt. of Maharashtra, Mumbai.

	b)	Arrays and Strings
	c)	Pointers
	d)	Structures
Q.4		Attempt any THREE 3*4=12
	a)	Overview of C Programming
	b)	Write a program in 'C' to print the table for entered number.
	c)	Arrays and Strings
	d)	Pointers
	e)	Structures
Q.5		Attempt any TWO 2*6=12
	a)	Decision Control and Loop Control
	b)	Arrays and Strings
	c)	Functions
Q.6		Attempt any TWO 2*6=12
	a)	Arrays and strings
	b)	Functions
	c)	Structures



CLASS TEST - I

PAPER PATTERN

COURSE: - C Programming Language (22218)

PROGRAMME: - Electronics and Telecommunication

Syllabus: -

Unit No.	Name of the Unit	Course Outcome (CO)
1	Overview of C Language	CO-218.1
2	Decision Control and Loop Control	CO-218.2
3	Arrays and Strings	CO-218.3

Q.1	Attempt any FOUR 4*2=8Marks	Course Outcome (CO)
a)	Overview of C programming	CO-218.1
b)	Decision control and Loop control	CO-218.2
c)	Array and Strings	CO-218.3
d)	Decision control and Loop control	CO-218.2
e)	Array and Strings	CO-218.3
f)	Overview of C programming	CO-218.1
Q.2	Attempt any Two 2*6=12 Marks	
a)	Array and Strings	CO-218.3
b)	Array and Strings	CO-218.3
c)	Decision control and Loop control	CO-218.2



Maratha Vidya Prasarak Samaj's

Rajarshi Shahu Maharaj Polytechnic, Nashik

Udoji Maratha Boarding Campus, Near Pumping Station, Gangapur Road, Nashik-13.

RSM POLY

Affiliated to MSBTE Mumbai, Approved by AICTE New Delhi, DTE Mumbai & Govt. of Maharashtra, Mumbai.

CLASS TEST - II

PAPER PATTERN

COURSE: - C Programming Language (22218)

PROGRAMME: - Electronics & Telecommunication

Syllabus: -

Unit No.	Name of the Unit	Course Outcome (CO)
4	Functions	CO-218.3
5	Pointers	CO-218.4
6	Structure	CO-218.5

		Course Outcome (CO)
Q.1	Attempt any FOUR	
	4*2=8Marks	
a)	Functions	(CO-218.4)
b)	Pointers	(CO-218.5)
c)	Pointers	(CO-218.5)
d)	Functions	(CO-218.4)
e)	Structures	(CO-218.6)
f)	Structures	(CO-218.6)
Q.2	Attempt any Two	
	2*6=12 Marks	
a)	Functions	(CO-218.4)
b)	Pointers	(CO-218.5)
c)	Functions	(CO-218.4)
d)	Structures	(CO-218.6)



COURSE OUTCOME

(CO)

COURSE: - C Programming Language (22218)

PROGRAMME: - Electronics & telecommunication

CO. NO.	Course Outcome
CO-218.1	Interpret the basic code of C
CO-218.2	Implement the decision making in C programming
CO-218.3	Use Arrays and Strings in C programming
CO-218.4	Use functions in C programs for modulate programming approach
CO-218.5	Use pointers to increase efficiency of programs
CO-218.6	Implement basic concept of structure in C



1. Overview of Programming

Position in Question Paper

Total Marks-10

Q.1. a) 2-Marks.

Q.2. a) 4-Marks.

Q.3. a) 4-Marks.

Descriptive Question

1. State any four relational operators in 'C'.
2. Describe scanf() with its syntax and example.
3. Describe with suitable example difference between preincrement and postincrement operator.
4. Write an algorithm and draw flowchart to find whether entered number is even or odd.
5. Explain any four datatypes used in C with example.
6. Enlist any four bitwise operators used in C and give example of each.
7. Distinguish between compiler and interpreter.
8. State the use of %d and %f and write the printf statement of 'C' using above mentioned symbols.
9. Explain conditional operator with example.

MCO Question

(Total number of Question=Marks*3=10*3=48)

Note: Correct answer is marked with **bold**.

- Who invented C language
 - Charles Babbage
 - Dennis Ritchie**
 - Graham Bell
 - Steve Jobs
- C is _____ type of programming language
 - Procedural**
 - Bit level
 - Object Oriented
 - Functional
- An Identifier can start with
 - Alphabet
 - Underscore_ sign
 - Any character
 - option a & b**
- Find an integer constant
 - 3.145
 - 34**
 - "125"
 - None
- Which of the following is not a valid C variable name?
 - int number;
 - int \$main;**
 - float rate;
 - int variable_count;
- The format identifier '%i' is also used for _____ data type.
 - char
 - float
 - int**
 - double
- What will be the output of the following C code?

```
#include <stdio.h>
int main()
{
    int i = -3;
    int k = i % 2;
    printf("%d\n", k);
}
```

 - compile time error
 - 1
 - 1**
 - Implementation defined
- What is the precedence of arithmetic operators (from highest to lowest)?
 - %, +, /, *, -
 - +, -, %, *, /
 - %, *, /, +, -**
 - %, +, -, *, /
- Which of the following is not an arithmetic operation?

- a) 1
b) 5
c) 10
d) Syntax Error

15. Which among the following is NOT a logical or relational operator?

- a) =
b) !=
c) ==
d) ||

16. Relational operators cannot be used on _____

- a) long
b) structure
c) strings
d) float

17. What will be the output of following code

```
#include <stdio.h>
void main()
{
    int x = 97;
    char y = x;
    printf("%c\n", y);
}
```

- a) a
b) 97
c) b
d) runtime error

18. When double is converted to float, then the value is?

- a) Truncated
b) Rounded
c) **Depends on the compiler**
d) Depends on the standard

19. What will be the output of the following C code?

```
#include <stdio.h>
int main()
{
    int a = 1, b = 1, c;
    c = a++ + b;
    printf("%d, %d", a, b);
}
```

- a) a = 1, b = 1
b) **a = 2, b = 1**
c) a = 1, b = 2
d) a = 2, b = 2

20. What will be the output of the following C code?

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

- a) 0
b) 1
c) 2
d) Compile time error

21. What will be the output of the following C code?

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

- a) 3 2 3
b) 2 3 3
c) 3 2 2
d) 2 3 4

22. What will be the output of the following C code?

```
#include <stdio.h>
int main()
{
    int a = 2;
    if (a >> 1)
        printf("%d\n", a);
}
```

- a) 0
b) 1
c) 2
d) No Output

23. What will be the output of the following C code?

```
#include <stdio.h>
void main()
{
    int k = 8;
    int x = 0 == 1 && k++;
    printf("%d%d\n", x, k);
}
```

- a) 0 9
b) 0 8
c) 1 8
d) 1 9

24. What will be the output of the following C code snippet?

```
#include <stdio.h>
void main()
{
    1 < 2 ? return 1: return 2;
}
```

- a) returns 1
b) returns 2
c) Varies
d) **Compile time error**

25. What is the type of the following assignment expression if x is of type float and y is of type int?

y = x + y;

- a) **int**
b) float
c) there is no type for an assignment expression
d) double

26. What will be the output of the following C code?

```
#include <stdio.h>
int main()
{
    int a = 1, b = 2;
    a += b -= a;
    printf("%d %d", a, b);
}
```

- a) **21**
b) 11
c) 12
d) 22

27. What will be the output of the following C code?

```
#include <stdio.h>
void main()
{
    int k = 8;
    int m = 7;
    int z = k < m ? k++ : m++;
    printf("%d", z);
}
```

- a) 8
b) **7**
c) runtime error
d) 15

28. Which of the data types has the size that is variable?

- a) int
b) **struct**
c) float
d) double

29. What will be the output of the following C code?

```
#include <stdio.h>
int main()
{
    int x = 2, y = 0;
    int z = x && y = 1;
    printf("%d\n", z);
}
```

a) 0

b) 1

c) Compile Time Error

d) 2

30. What is the output of the C Program.?

```
int main()
{
    float a=10.0;
    a = a % 3;
    printf("%f", a);

    return 0;
}
```

a) 0

b) 1

c) Compile Time Error

d) 1.00000



2. Decision Control And Loop Control

Position in Question Paper

Total Marks-12

Q.1. b) 2-Marks.

Q.1. c) 2-Marks.

Q.2. b) 4-Marks.

Q.5. c) 6-Marks.

Descriptive Question

1. State use of continue statement.
2. Give syntax of switch case statement
3. Compare while and do-while loop.
4. Describe use of nested if-else statement with syntax and example.
5. Explain else-if ladder with syntax and its execution with example. Also draw flow chart for else-if ladder.
6. With suitable example, describe importance of break statement used with switch statement.
7. State any four control statements.

MCQ Question

(Total number of Question=Marks*3=12*3=36)

Note: Correct answer is marked with **bold**

1. Choose a right C Statement.
 - a) Loops or Repetition block executes a group of statements repeatedly.
 - b) Loop is usually executed as long as a condition is met.
 - c) Loops usually take advantage of Loop Counter
 - d) All the above.**
2. What is the output of C Program.?

```
int main()
{
    while(true)
    {
        printf("RABBIT");
        break;
    }

    return 0;
}
```

- a) RABBIT
 - b) RABBIT is printed unlimited number of times.
 - c) No output
 - d) Compiler error.**
3. What is the output of C Program.?

```
int main()
{
    int a=25;

    while(a <= 27)
    {
        printf("%d ", a);
        a++;
    }

    return 0;
}
```

- a) 25 25 25
 - b) 25 26 27**
 - c) 27 27 27
 - d) Compiler error
4. Decision Control Statement in C can be implemented using
 - a) if
 - b) if-else
 - c) conditional operator
 - d) All of the above**
 5. The conditional operator are also known a

- a) Relational operator
b) Ternary operator
 c) Binary operator
 d) Chary operator
6. $y = (x > 6 ? 4 : 6)$; What will be the value of y if $x = 8$?
 a) 0
b) 4
 c) Compilation error
 d) 6
7. Which of the following operator reverses the result of expression it operators on
 a) !
 b) &&
 c) ||
 d) All the above
8. In situations where we need to execute body of the loop before testing the condition, we should use _____.
 a) for loop
 b) while loop
 c) **do ..while**
 d) nested for loop
9. What is the output of C Program.?

```
int main()
{
    int k;

    for(k=1; k <= 5; k++);
    {
        printf("%d ", k);
    }

    return 0;
}
```

- a) 1 2 3 4 5
 b) 1 2 3 4
 c) **6**
 d) 5
10. What is the way to suddenly come out of or Quit any Loop in C Language.?
 a) continue
 b) leave
 c) quit
 d) **break**
11. Choose facts about continue; statement is C Language.
 a) continue; is used to take the execution control to next iteration or sequence
 b) continue; statement causes the statements below it to skip for execution
 c) continue; is usually accompanied by IF statement.
 d) **All the above.**
12. Choose a correct statement about C break; statement.?
 a) break; statement can be used inside switch block
 b) break; statement can be used with loops like for, while and do while
 c) break; statement causes only the same or inner loop where break; is present to quit suddenly
 d) **All the above**

13. Choose a correct C Statement regarding for loop. for(; ;);
- a) for loop works exactly first time
 - b) for loop works infinite number of times**
 - c) Compiler error
 - d) None of the above
14. ++ operator used within Loops increment the value of variable by how many
- a) 1
 - b) 2
 - c) 10
 - d) depends on compiler
15. How many AND gates are required for a 1-to-8 Choose a C Conditional Operator from the list.
- a) :?
 - b) :<
 - c) ?:
 - d) <:
16. Choose a statement to use C If Else statement.
- a) else if is compulsory to use with if statement
 - b) else or else if is optional with if statement**
 - c) else is compulsory to use with if statement
 - d) None of the above
17. What is the output of the C Program.?

```
int main()
{
    if( 4 > 5 )
    {
        printf("Hurray..\n");
    }
    printf("Yes");

    return 0;
}
```

- a) Hurray..Yes
 - b) Yes**
 - c) Compiler error
 - d) Hurray.. Yes
18. Case label in switch statement must be constants only.
- a) True**
 - b) False
19. Case label in switch statement must be constants only.

```
#include <stdio.h>
void main()
{
    int x = 5;
    if (x < 1)
        printf("hello");
    if (x == 5)
        printf("hi");
    else
        printf("no");
}
```

- a) hi
b) hello
- c) no
d) error

20. What will be the output of the following C code?

```
#include <stdio.h>
void main()
{
    int x = 0;
    if (x == 0)
        printf("hi");
    else
        printf("how are u");
        printf("hello");
}
```

- a) hi
b) how are u
- c) **hihello**
d) hello

21. What will be the output of the following C code?

```
#include <stdio.h>
void main()
{
    int x = 5;
    if (x < 1);
        printf("Hello");
}
```

- a) Nothing
b) Run time error
- c) **Hello**
d) Varies

22. What will be the output of the following C code?

```
#include <stdio.h>
int main()
{
    int x = 97;
    switch (x)
    {
        case 'a':
            printf("yes ");
            break;
        case 97:
            printf("no\n");
            break;
    }
}
```

- a) yes
b) yes no
- c) **Duplicate case value error**
d) Character case value error

23. What will be the output of the following C code?

```
#include <stdio.h>
#define max(a) a
int main()
{
    int x = 1;
    switch (x)
    {
        case max(2):
            printf("yes\n");
        case max(1):
            printf("no\n");
            break;
    }
}
```

- a) no
- b) yes no
- c) yes
- d) compile time error

24. Which datatype can accept the switch statement?

- a) int
- b) char
- c) long
- d) all of the mentioned

26. What will be the output of the following C code?

```
#include <stdio.h>
void main()
{
    int i = 0;
    if (i == 0)
    {
        printf("Hello");
        continue;
    }
}
```

- a) Hello is printed infinite times
- b) Hello
- c) Varies
- d) Compile time error

27. What will be the output of the following C code?

```
#include <stdio.h>
void main()
{
    int i = 0;
    if (i == 0)
    {
        printf("Hello");
        break;
    }
}
```

- a) Hello is printed infinite times
b) Hello
c) Varies
d) **Compile time error**

28. What will be the output of the following C code?

```
#include <stdio.h>
int main()
{
    printf("%d ", 1);
    goto 11;
    printf("%d ", 2);
11:goto 12;
    printf("%d ", 3);
12:printf("%d ", 4);
}
```

- a) **1 4**
b) Compilation error
c) 1 2 4
d) 1 3 4

29. What is the output of C Program.?

```
int main()
{
    int k;

    for(;;)
    {
        printf("TESTING\n");
        break;
    }

    return 0;
}
```

- a) no output
b) **TESTING**
c) Compile error
d) None of the above

30. What is the output of C Program with switch statement.?

```
int main()
{
    int a=3;

    switch(a)
    {
        case 2: printf("ZERO "); break;

        case default: printf("RABBIT ");
    }
}
```

- a) RABBIT
b) **ZERO RABBIT**

c) No output

d) Compiler error

31. What is the output of C Program.?

```
int main()
{
    int a=0, b=0;
    while(++a < 4)
        printf("%d ", a);

    while(b++ < 4)
        printf("%d ", b);

    return 0;
}
```

a) 0 1 2 3 1 2 3 4

c) 1 2 3 4 1 2 3 4

b) 1 2 3 1 2 3 4

d) 1 2 3 4 0 1 2 3

32. for (int i = 1 , j = 2 ; j <= 7 ; j++) Will the above statement execut

a) Yes

c) Compile Time Error

b) No

d) Runtime Error

33. When _____ is encountered inside any loop, Control automatically passes to the first statement after loop.

a) break

c) goto

b) continue

d) return

34. If block always need to be associated with a else block?

a) True

b) False

35. What is the output of C Program?

```
int main()
{
    int a=25;

    while(a <= 27)
    {
        printf("%d ", a);
        a++;
    }

    return 0;
}
```

a) 25 25 25

c) 27 27 27

b) 25 26 27

d) Compiler error



36. What is the output of C Program.?

```
int main()
{
    int k, j;

    for(k=1, j=10; k <= 5; k++)
    {
        printf("%d ", (k+j));
    }

    return 0;
}
```

- a) compiler error
b) 10 10 10 10 10
c) 10 11 12 13 14 15
d) None of the above



3. Array and Strings

Position in Question Paper

Total Marks-16

Q.2. c) 4-Marks.

Q.3. b) 4-Marks.

Q.4. d) 4-Marks.

Q.4. c) 4-Marks.

Q.5. b) 6-Marks.

Q.6. a) 6-Marks.

Descriptive Question

- 1 State the ways of declaration and initialization of string variables.
- 2 Declare and initialize the one dimensional integer array with 10 elements.
- 3 Define array and explain how elements of array can be accessed.
- 4 Define Array.
- 5 Explain the use of the following function with syntax :
 - i) Strcmp()
 - ii) Strlen()
- 6 Explain how to initialize two dimensional array with example.
- 7 State any two advantages and any two limitations of an array.
- 8 Describe following functions with their syntax and example.
 - (i) strcat()
 - (ii) strcmp()

MCQ Question

(Total number of Question=Marks*3=16*3=48)

Note: Correct answer is marked with **bold**

1. What is a String in C Language?
 - a) String is a new Data Type in C
 - b) String is an array of Characters with null character as the last element of array.**
 - c) String is an array of Characters with null character as the first element of array
 - d) String is an array of Integers with 0 as the last element of array.
2. Choose a correct statement about C String?
char ary[]="Hello..!";
 - a) Character array, ary is a string.**
 - b) ary has no Null character at the end
 - c) String size is not mentioned
 - d) String can not contain special characters.
3. What is the Format specifier used to print a String or Character array in C Printf or Scanf function?
 - a) %c
 - b) %C
 - c) %s**
 - d) %w
4. What is the output of C Program with Strings.?

```
int main()
{
    char ary[]="Discovery Channel";
    printf("%s",ary);
    return 0;
}
```

- a) D
 - b) Discovery Channel**
 - c) Discovery
 - d) Compiler error
5. What is the output of C Program with Strings.?

```
int main()
{
    char str[]={ 'g', 'l', 'o', 'b', 'e' };
    printf("%s",str);
    return 0;
}
```

- a) g
b) globe
c) globe\0
d) None of the above
6. What is the output of C Program with Strings.?

```
int main()
{
    char str[]={'g','l','o','b','y','\0'};
    printf("%s",str);
    return 0;
}
```

- a) g
b) globe
c) globe\0
d) None of the above
7. How do you convert this char array to string.?
char str[]={'g','l','o','b','y'};
- a) str[5] = 0;
b) str[5] = '\0'
c) str[]={'g','l','o','b','y','\0'};
d) All the above
8. What is the output of C Program with arrays.?

```
int main()
{
    char str[]={"C","A","T","\0"};
    printf("%s",str);
    return 0;
}
```

- a) C
b) CAT
c) CAT\0
d) Compiler Error
9. What is the maximum length of a C String.?
a) 32 characters
b) 64 characters
c) 256 characters
d) None of the above
10. How do you accept a Multi Word Input in C Language.?
a) SCANF
b) GETS
c) GETC
d) FINDS
11. Choose a correct C Statement about Strings.
a) PRINTF is capable of printing a multi word string
b) GETS is capable of accepting a multi word string from console or command prompt
c) PUTS is capable of printing a multi word string.
d) All the above
12. What is an Array in C language.?
a) A group of elements of same data type.
b) An array contains more than one element.
c) Array elements are stored in memory in continuous or contiguous locations.



d) All the above.

13. Choose a correct statement about C language arrays.

- a) An array address is the address of first element of array itself.
- b) An array size must be declared if not initialized immediately.
- c) Array size is the sum of sizes of all elements of the array.

d) All the above

14. What are the Types of Arrays.?

- a) int, long, float, double
- b) struct, enum
- c) char
- d) All the above

15. An array Index starts with.?

- a) -1
- b) 0
- c) 1
- d) 2

16. Choose a correct statement about C language arrays.

- a) An array size can not be changed once it is created.
- b) Array element value can be changed any number of times
- c) To access Nth element of an array students, use students[n-1] as the starting index is 0.

d) All the above

17. What is the output of C Program.?

```
int main()
{
    int a[];
    a[4] = {1,2,3,4};
    printf("%d", a[0]);
}
```

- a) 1
- b) 2
- c) 4
- d) Compiler Error

18. What is the output of C Program.?

```
int main()
{
    int a[] = {1,2,3,4}; i
    int b[4] = {5,6,7,8};
    printf("%d,%d", a[0], b[0]);
}
```

- a) 1,5
- b) 2,6
- c) 0,0
- d) Compiler error

19. What is an array Base Address in C language.?

- a) Base address is the address of 0th index element.
- b) An array b[] base address is &b[0]

c) An array b[] base address can be printed with printf("%d", b);

d) All the above

20. What is the output of C program with arrays and pointers.?

```
int main()
{
    int a[3] = {20,30,40};
    printf("%d", *(a+1));
}
```

a) 20

b) 30

c) 40

d) Compiler error

21. What is the output of C Program.?

```
int main()
{
    int a[3] = {20,30,40};
    a[0]++;
    int i=0;
    while(i<3)
    {
        printf("%d ", i[a]); i++;
    }
}
```

a) 20 30 40

b) 41 30 20

c) 21 30 40

d) None of the above

22. What is the output of C program.?

```
int main()
{
    int a[3] = {10,12,14};
    int i=0;
    while(i<3)
    {
        printf("%d ", i[a]);
        i++;
    }
}
```

a) 14 12 10

b) 10 10 10

c) 10 12 14

d) none

23. Strcat function adds null character?

a) Only if there is space

b) Always

c) Depends on the standard

d) Depends on the compiler



24. The library function used to find the last occurrence of a character in a string is
- a) strstr()
 - b) laststr()
 - c) **strrchr()**
 - d) strstr()
25. What will happen if in a C program you assign a value to an array element whose subscript exceeds the size of array?
- a) The element will be set to 0.
 - b) The compiler would report an error.
 - c) **The program may crash**
 - d) None of the above
26. An array elements are always stored in _____ memory locations.?
- a) **Sequential**
 - b) Random
 - c) Sequential and Random
 - d) None of the above
27. What is the output of this program?

```
#include <stdio.h>
int main()
{
    int a[1]={100};
    printf("%d", 0[a]);
    return 0;
}
```

- a) 0
 - b) Garbage Value
 - c) **100**
 - d) Compiler Error
28. Which is true about the given statement ?
- ```
int arr[10] = {0,1,2,[7]=7,8,9};
```
- a) Compilation Error
  - b) Run-time Error
  - c) **This is allowed in C**
  - d) None of the above
29. What is the output of this program?

```
#include <stdio.h>
#include <string.h>
void main()
{
 char s1[20] = "Hello", s2[10] = " World";
 printf("%s", strcpy(s2, strcat(s1, s2)));
}
```

- a) **Hello world**
  - b) HelloWorld
  - c) Hello
  - d) World
30. What is the output of the given code ?

```
#include <stdio.h>
int main()
{
```

```
int i;
char str[] = "";
if (printf("%s", str))
 printf("Empty String");
else
 printf("String is not empty");
return 0;
```

}

a) Empty String

**b) String is not empty**

c) 0

d) None of the above

31. What is the output of this program?

```
#include <stdio.h>
int main()
{
 char str = "Hello";
 printf("%s", str);
 return 0;
}
```

a) Hello

**b) Base address of str**

c) Segmentation Fault

**d) None of the above**

32. A string in C is

**a) 1-D Array of Character**

b) 1-D Array of Character

c) Any of i & ii

d) None of the above

33. Size of the array need not be specified, when?

**a) Initialization is a part of definition**

b) It is a formal parameter

c) It is a declaration

d) All of the above

34. Array is an example of \_\_\_\_\_ type memory allocation.

**a) Compile time**

b) Run time

c) Both A and B

d) None of the above

35. If the two strings are identical, then strcmp() function returns.

**a) 0**

b) -1

c) 1

d) None

36. An entire array is always passed by \_\_\_\_ to a called function. \_\_\_\_\_

**a) Call by reference**

b) Call by value

c) Address relocation

d) Address relocation

37. How do you initialize an array in C?

**a) int arr[3] = {1,2,3}**

b) int arr[3] = (1,2,3);

c) int arr(3) = {1,2,3};

d) int arr(3) = (1,2,3);

38. What will be the output of the following C code?

```
#include <stdio.h>
int main()
{
 char a[1][5] = {"hello"};
 printf("%s", a[0]);
 return 0;
}
```

- a) Compile time error  
 b) hello  
 c) Undefined behaviour  
 d) hellon
39. Which function will you choose to join two words?  
 a) strcpy()  
 b) **strcat()**  
 c) strncon()  
 d) memcon()
40. What will strcmp() function do?.  
 a) compares the first n characters of the object  
 b) **compares the string**  
 c) undefined function  
 d) copies the string
41. Is there any function declared as strstr()?.  
 a) **True**  
 b) False
42. The \_\_\_\_\_ function returns the number of characters that are present before the terminating null character.  
 a) **strlen()**  
 b) strlength()  
 c) strlen()  
 d) strchr()
43. What will be the output of the following code?

```
#include <stdio.h>
int main(void)
{
 char p;
 char buf[10] = {1, 2, 3, 4, 5, 6, 9, 8};
 p = (buf + 1)[5];
 printf("%d", p);
 return 0;
}
```

- a) **9**  
 b) 5  
 c) 6  
 d) error
44. What is the output of C program with arrays?  

```
int main()
{
 int a[3] = {20,30,40};
 int b[3];
```

```
b=a;
printf("%d", b[0]);
}
```

- a) 20  
b) 30  
c) address of 0<sup>th</sup> element  
d) **compiler error**
45. What happens when you try to access an Array variable outside its Size.?.  
a) **Compiler error is thrown**  
b) 0 value will be returned  
c) 1 value will be returned  
d) **Some garbage value will be returned**
46. What is the size of an array in the below C program statement.?  
a) **9**  
b) 8  
c) 10  
d) None of the above
47. What is the minimum and maximum Indexes of this below array.?

```
int main()
{
 int ary[9];
 return 0;
}
```

- a) **0,8**  
b) -1,8  
c) 1,9  
d) None of the above
48. Can we change the starting index of an array from 0 to 1 in any way.?  
a) Yes. Through pointers  
b) Yes. Through Call by Value.  
c) Yes. Through Call by Reference  
d) **None of the above**





# 4. Functions

---

**Position in Question Paper**

**Total Marks-12**

**Q.1. d) 2-Marks.**

**Q.2. d) 4-Marks.**

**Q.5. c) 6-Marks**

**Q.6. b) 6-Marks.**

---

## **Descriptive Question**

1. Give syntax of declaring user defined function.
2. List two mathematical functions used in C programming.
3. Write a program to add two numbers using functions.
4. Explain recursive function with example and state its advantages.
5. Write a program to calculate  $n^{\text{th}}$  power of a number using function
6. What is difference between declaration and definition?
7. Explain string function.
8. Write a program to find whether A given string is palindrome or not.
9. Explain call by value and call by reference.
10. Explain user defined functions.

## MCQ Question

(Total number of Question=Marks\*3=12\*3=36)

Note: Correct answer is marked with **bold**

1. Choose correct statement about Functions in C Language.
  - a) A Function is a group of c statements which can be reused any number of times.
  - b) Every Function has a return type
  - c) Every Function may no may not return a value.
  - d) All the above.**
2. Choose a correct statement about C Language Functions.
  - a) A function name can not be same as a predefined C Keyword.
  - b) A function name can start with an Underscore( \_ ) or A to Z or a to z.
  - c) Default return type of any function is an Integer.
  - d) All the above.**
3. Choose a correct statement about C Function.?
  - a) "main" is the name of default must and should Function.
  - b) main() is same as int main()
  - c) By default, return 0 is added as the last statement of a function without specific return type.
  - d) All of the mentioned**
4. A function which calls itself is called a \_\_\_\_ function.
  - a) Self Function
  - b) Auto Function
  - c) Recursive Function**
  - d) Static Function
5. What is the output of C Program with Functions.?

```
int main()
{
 void show()
 {
 printf("HIDE");
 }
 show();
 return 0;
}
```

- a) No output
  - b) HIDE**
  - c) Compiler
  - d) None of the mentioned
6. What is the output of C Program with functions.?

```
void show();

int main()
{
 show();
 printf("ARGENTINA ");
 return 0;
}

void show()
{
 printf("AFRICA ");
}
```

- a) ARGENTINA AFRICA  
 b) AFRICA ARGENTINA  
 c) ARGENTINA  
 d) Compiler error
7. What is the output of C Program with functions.?

```
int main()
{
 show();
 printf("BANK ");
 return 0;
}

void show()
{
 printf("CURRENCY ");
}
```

- a) CURRENCY BANK  
 b) BANK CURRENCY  
 c) BANK  
 d) Compiler error
8. How many values can a C Function return at a time.?  
 a) Only One Value  
 b) Maximum of two values  
 c) Maximum of three values  
 d) Maximum of 8 values
9. What is the output of a C program with functions.?

```
void show();

void main()
{
 show();
 printf("RAINBOW ");

 return;
}

void show()
{
 printf("COLOURS ");
}
```

- a) RAINBOW COLOURS  
 b) COLOURS RAINBOW  
 c) COLOURS  
 d) Compiler error
10. What is the output of C Program.?

```
void show();

void main()
{
 printf("PISTA ");
 show();
}

void show()
{
 printf("CACHEW ");
 return 10;
}
```

- a) PISTA CACHEW
- b) CASHEW PISTA
- c) **PISTA CASHEW with compiler warning**
- d) Compiler error

11. What is the output of C Program with functions.?

```
int show();

void main()
{
 int a;
 printf("PISTA COUNT=");
 a=show();
 printf("%d", a);
}

int show()
{
 return 10;
}
```

- a) PISTA COUNT=
- b) PISTA COUNT=0
- c) **PISTA COUNT=10**
- d) Compiler error

12. What is the output of C Program with functions.?

```
void main()
{
 int a;
 printf("TIGER COUNT=");
 a=show();
 printf("%d", a);
}

int show()
{
 return 15;
 return 35;
}
```

- a) TIGER COUNT=0
- b) TIGER COUNT=35
- c) **TIGER COUNT=15**
- d) Compiler error

13. What are types of Functions in C Language.?

- a) Library Functions
- b) User Defined Functions
- c) **Both Library and User Defined**
- d) None of the above

14. What is the output of C program with functions.?

```
int show();

void main()
{
 int a;
 a=show();
 printf("%d", a);
}

int show()
{
 return 15.5;
 return 35;
}
```

- a) 15.5
- b) 0

- c) 15
- d) Compiler error

15. What is the output of C Program.?

```
int myshow(int);

void main()
{
 myshow(5);
 myshow(10);
}

int myshow(int b)
{
 printf("Received %d, ", b);
}
```

- a) Received 10, Received 5,
- b) Received 5, Received 10,**

- c) Received 0, Received 0
- d) Compiler error

16. What is the output of C Program with functions and pointers.?

```
int myshow(int);

void main()
{
 int a=10;
 myshow(a);
 myshow(&a);
}

int myshow(int b)
{
 printf("Received %d, ", b);
}
```

- a) Received 10, Received RANDOMNumber, with a compiler warning**
- b) Received 10, Received 10,
- c) Received 10, Received RANDOMNumber,
- d) Compiler Error

17. What is the output of C Program with functions.?





```
b = temp;
```

```
}
```

a) Call swap (x, y)

b) Call swap (&x, &y)

c) swap(x,y) cannot be used as it does not return any value

**d) swap(x,y) cannot be used as the parameters are passed by value**

32. The value of j at the end of the execution of the following C program.

```
int incr(int i)
{
 static int count = 0;
 count = count + i;
 return (count);
}
main()
{
 int i,j;
 for (i = 0; i <=4; i++)
 j = incr(i);
}
```

a) 4

**c) 10**

b) 6

d) 7

33. Assuming int size is 4 bytes, what is going to happen when we compile and run the following program?

```
#include "stdio.h"
int main()
{
 printf("Hi");
 main();
 return 0;
}
```

a) We can't use main() inside main() and compiler will catch it by showing compiler error.

b) Hi would be printed in 2147483647 times i.e. (2 to the power 31) - 1.

c) Hi would be printed until stack overflow happens for this program.

d) none of the mentioned.

34. Pick the best statement for the following program.

```
#include "stdio.h"
```



```
int foo(int a)
{
 printf("%d",a);
 return 0;
}
int main()
{
 foo;
 return 0;
}
```

- a) It'll result in compile error because foo is used without parentheses
- b) No compile error and some garbage value would be passed to foo function. This would make foo to be executed with output "garbage integer"
- c) No compile error but foo function wouldn't be executed. The program wouldn't print anything**
- d) none of the mentioned

35. Consider the following C-program :

```
int fun()
{
 static int num = 16;
 return num--;
}
int main()
{
 for(fun(); fun(); fun())
 printf("%d ", fun());
 return 0;
}
```

- a) Infinite loop
- b) 14 11 8 5 2**
- c) 13 10 7 4 1
- d) 15 12 8 5 2

36. Consider the function. For func(435) the value returned is

```
int func(int num) {
 int count = 0;
 while(num) {
 count++;
 num >>= 1;
 }
 return(count) ;
}
```



**Maratha Vidya Prasarak Samaj's**  
**Rajarshi Shahu Maharaj Polytechnic, Nashik**

**Udoji Maratha Boarding Campus, Near Pumping Station, Gangapur Road, Nashik-13.**

**Affiliated to MSBTE Mumbai, Approved by AICTE New Delhi, DTE Mumbai & Govt. of Maharashtra, Mumbai.**

---

- a) 9
- b) 8

- c) 0
- d) 10



# 5. Pointers

---

**Position in Question Paper**

**Total Marks-10**

**Q.1. e) 2-Marks.**

**Q.1. f) 2-Marks.**

**Q.3. c) 4-Marks.**

---

## Descriptive Question

1. Give the meaning of declaration `int *ptr`. Explain initialization of pointer with example.
2. State any two uses of pointer.
3. State use of `*` and `&` used in pointers.
4. Explain meaning of following statement with reference to pointer `:Int* p1,p2;`  
`P1=&var;`  
`P2=p1`
5. Explain the concept of pointers arithmetic operation and example.
6. Explain pointer's arithmetic's.
7. State any two difference between call by value and call by reference.
8. Explain dynamic memory allocation in detail.
9. Write a program to increment and decrement operator by using pointer variables.

## MCQ Question

(Total number of Question=Marks\*3=10\*3=30)

Note: Correct answer is marked with **bold**

1. Choose the best answer prior to using a pointer variable \_\_\_\_\_
  - a) **It should be both declared and initialized**
  - b. It should be declared.
  - c. It should be initialized.
  - d. None of these
2. Comment on the following pointer declaration `int *ptr, p;`
  - a) ptr and p, both are pointers to integer
  - b) ptr is a pointer to integer, p is not.**
  - c) ptr is pointer to integer, p may or may not be
  - d) ptr and p both are not pointers to integer
3. What will be the output?

```
main()
{
 char *p;
 p = "Hello";
 printf("%cn", *&*p);
}
```

- a) Hello
  - b) some address will be printed
  - c) H**
  - d) none of the mentioned
4. Determine Output

```
#include <stdio.h>
void main()
{
 char *p = NULL;
 char *q = 0;
 if (p)
 printf(" p ");
 else
 printf("nullp");
 if (q)
 printf("q");
 else
 printf(" nullq");
}
```

- a) p q
  - b) Depends on the compiler
  - c) nullp nullq**
  - d) x nullq where x can be p or nullp depending on the value of NULL
5. The address operator & cannot act on

- a) R-value  
b) Arithmetic expression  
c) **Both of the above**  
d) Local variable
6. The statement `int **a`  
a) is illegal  
b) is legal but meaningless  
c) **syntactically & semantically correct**  
d) none of these
7. What will be the output of the following program?

```
#include<stdio.h>
void main()
{
 int i = 10;
 void *p = &i;
 printf("%d\n", (int) *p);
}
```

- a) segmentation fault  
b) 10  
c) undefined behavior  
d) **compile time error**
8. What will be the output of the following program code

```
#include<stdio.h>
void main()
{
 int i = 10;
 void *p = &i;
 printf("%f", *(float *)p);
}
```

- a) 10  
b) Error  
c) none  
d) **0.000000**
9. The operator `>` and `<` are meaningful when used with pointers, if  
a) The pointers point to data of similar type  
b) **The pointers point to elements of the same array.**  
c) The pointers point to structure of similar data type  
d) None of these
10. The declaration `int (*p)[5]`; means  
a) p is one dimensional array of size 5, of pointers to integers  
b) **p is a pointer to a 5 elements integer array**  
c) The same as `int *p[`  
d) None of these.

11. Comment on the following?

```
cons int *ptr
```

- a) We cannot change the pointer ptr itself.
- b) We can change the pointer as well as the value pointed by it.
- c) Both of the above
- d) We cannot change the value pointed by ptr.**

12. What is (void\*)0?

- a) Representation of NULL pointer**
- b) Representation of void pointer
- c) Error
- d) None of the above

13. A pointer is

- a) A keyword used to create variables
- b) A variable that stores address of an instruction
- c) A variable that stores address of other variable**
- d) All of the above

14. The operator used to get value at address stored in a pointer variable is

- a) &&
- b) ||
- c) &
- d) \***

15. Which of the statements is correct about the program?

```
#include<stdio.h>

int main()
{
 int i=10;
 int *j=&i;
 return 0;
}
```

- a) j and i are pointers to an int
- b) j is a pointer to an int and stores address of i**
- c) i is a pointer to an int and stores address of j
- d) j is a pointer to a pointer to an int and stores address of i

16. Which of the statements is correct about the program?

```
#include<stdio.h>

int main()
{
 float a=3.14;
 char *j;
 j = (char*)&a;
 printf("%d\n", *j);
 return 0;
}
```



- a) Error: Declaration syntax  
 b) Error: Expression syntax

- c) **Error: LValue required**  
 d) Error: Rvalue required

21. Output of following program?

```
include <stdio.h>
void fun(int *ptr)
{
 *ptr = 30;
}

int main()
{
 int y = 20;
 fun(&y);
 printf("%d", y);

 return 0;
}
```

- a) 20  
 b) **30**

- c) Compiler Error  
 d) Runtime error

22. A function 'p' that accepts a pointer to a character as arguments and returns a pointer to an array of integer can be declared as

- a) **int(\*p(char \*))[ ]**  
 b) int \*p(char \*)[ ]

- c) int (\*p) (char \*)[ ]  
 d) None of these

23. What will be printed after compiling and running the following code

```
main()
{
 char *p;
 printf("%d %d", sizeof(*p), sizeof(p));
}
```

- a) 1 1  
 b) **1 2**

- c) 2 1  
 d) 2 2

24. What will be the output of following program code?

```
#include <stdio.h>
void main()
{
 int i=3, *j, **k;
 j = &i;
 k = &j;
 printf("%d%d%d", *j, **k, *(*k));
}
```



a) 444

b) 333

c) 000

d) Garbage value

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

a) float ptr;

b) **float \*ptr;**

c) \*float ptr;

d) None of the above

26. Find output of the following code

```
void main()
{
 char *msg = "hi";
 printf(msg);
}
```

a) **hi**

b) h

c) hi followed by garbage value

d) error

27. Find the output of the following program?

```
void main()
{
 int array[10];
 int *i = &array[2], *j = &array[5];
 int diff = j-i;
 printf("%d", diff);
}
```

a) **3**

b) 6

c) Garbage value

d) Error

28. Find the output of the following code ?

```
void main()
{
 printf("%d, %d", sizeof(int *), sizeof(int **));
}
```

a) **2,2**

b) 0,2

c) 2,0

d) 2,4

29. Which of the following statements are true after execution of the program

```
void main()
{
 int a[10], i, *p;
 a[0] = 1;
 a[1] = 2;
 p = a;
 (*p)++;
}
```

a) a[1] = 3

b) a[0] = 2

c) a[1] = 2

d) Compilation error

30. What will be the output of the following code

```
#include<stdio.h>
void main()
{
 int a[]={ 1, 2, 3, 4, 5 }, *p;
 p=a;
 ++*p;
 printf("%d ", *p);
 p += 2;
 printf("%d", *p);
}
```

a) 2 4

b) 3 4

c) 2 2

d) 2 3



# 6. Structure

---

**Position in Question Paper**

**Total Marks-10**

**Q.1. g) 2-Marks.**

**Q.3. d) 4-Marks.**

**Q.4. e) 4-Marks.**

**Q.6. c) 6-Marks.**

---

## **Descriptive Question**

1. Define structure.
2. Give syntax of initialization of structure.
- 3 Explain declaration of structure with example.
4. Explain use of (->) operator with example.
5. Explain array of structure with example.
6. Declare a structure circle containing data members as radius area, perimeter. accept radius for one variable from user and find out perimeter and area.
7. Declare a structure book having element as book\_number, book\_title, book\_price and also declare array of structure taking input of 10 books using C programming language.
8. What is union?
9. Give syntax of Union. Q10. Compare structure and union



## MCQ Question

(Total number of Question=Marks\*3=10\*3=30)

Note: Correct answer is marked with **bold**

1. What is a structure in C language.?
  - a) A structure is a collection of elements that can be of same data type.
  - b) A structure is a collection of elements that can be of different data type.
  - c) Elements of a structure are called members.
  - d) All the above**
2. What is the size of a C structure.?
  - a) C structure is always 128 bytes.
  - b) Size of C structure is the total bytes of all elements of structure.**
  - c) Size of C structure is the size of largest element
  - d) None of the above
3. A structure declaration without any variables describe
  - a) Wizard
  - b) Shape of a structure
  - c) Template**
  - d) Both a and b
4. Which of the following are fundamental control structures?
  - a) Iteration
  - b) Branching
  - c) Sequencing
  - d) All the above**
5. What is the similarity between a structure, union and enumeration?
  - a) All are useful in defining new data types**
  - b) All are useful in defining new variable
  - c) All are useful in defining new structures
  - d) All are useful in defining new pointers
6. Find out the error in the below program?

```
struct employ
{
 int ecode;
 struct employ e;
};
```

- a) Linked Error
  - b) Error: in structure declaration**
  - c) No error
  - d) None of the above
7. What will be the output of the below program?



- a) Multiple of integer size  
b) integer size+character size  
c) Depends on the platform  
d) Multiple of word size
14. Find out the error in the below program?

```
struct employ
{
 int ecode;
 struct employ *e;
};
```

- a) Error: in structure declaration  
b) Linker  
c) No error  
d) none of the above
15. The union elements can be of different sizes.  
a) True  
b) False
16. What will be the output of a program in Turbo C under DOS (16 bit platform)?

```
#include<stdio.h>
int main()
{
 struct values
 {
 int bit1:1;
 int bit3:3;
 int bit4:4;
 }bit;
 printf("%d \n", sizeof(bit));
 return 0;
}
```

- a) 9  
b) 4  
c) 2  
d) 1
17. What is the output of C program.?

```
int main()
{
 struct book
 {
 int pages;
 char name[10];
 }a;
 a.pages=10;
 strcpy(a.name, "Cbasics");
 printf("%s=%d", a.name, a.pages);
 return 0;
}
```

- a) empty string=10  
b) C=basics  
c) Cbasics=10  
d) Compiler error

18. Choose a correct statement about C structures.?

- a) Structure elements can be initialized at the time of declaration.  
**b) Structure members can not be initialized at the time of declaration**  
c) Only integer members of structure can be initialized at the time of declaration  
d) None of the above

19. Choose a correct statement about C structure.?

```
int main()
{
 struct ship
 {

 };
 return 0;
}
```

- a) It is wrong to define an empty structure  
b) Member variables can be added to a structure even after its first definition.  
**c) There is no use of defining an empty structure**  
d) None of the above

20. What is the output of C program.?

```
int main()
{
 struct ship
 {
 int size;
 char color[10];
 }boat1, boat2;
 boat1.size=10;
 boat2 = boat1;
 printf("boat2=%d",boat2.size);
 return 0;
}
```

- a) boat2=0  
b) boat2=-1  
c) **boat2=10**  
d) Compiler error

21. What is the output of C program with structures.?

```
int main()
{
 struct tree
 {
 int h;
 }
 struct tree tree1;
 tree1.h=10;
 printf("Height=%d",tree1.h);
 return 0;
}
```

- a) Height=0  
b) **Height=10**  
c) Height=1  
d) Compiler error
22. Choose a correct statement about C structure elements.?  
a) Structure elements are stored on random free memory locations  
b) structure elements are stored in register memory locations  
c) **structure elements are stored in contiguous memory locations**  
d) None of the above.
23. A C Structure or User defined data type is also called.?  
a) Derived data type  
b) Secondary data type  
c) Aggregate data type  
d) **All the above**
24. What are the uses of C Structures.??  
a) structure is used to implement Linked Lists, Stack and Queue data structures  
b) Structures are used in Operating System functionality like Display and Input taking.  
c) Structure are used to exchange information with peripherals of PC  
d) **All the above**
25. What is the output of C program with structures.?

```
int main()
{
 struct tree
 {
 int h;
 int w;
 };
 struct tree tree1={10};
 printf("%d ",tree1.w);
 printf("%d",tree1.h);
 return 0;
}
```

- a) 0 0  
b) 10 0  
c) **0 10**  
d) 10 10
26. What is the output of C program.?



```
int main()
{
 struct laptop
 {
 int cost;
 char brand[10];
 };
 struct laptop L1={5000,"ACER"};
 struct laptop L2={6000,"IBM"};
 printf("Name=%s",L1.brand);
 return 0;
}
```

- a) ACER
- b) IBM
- c) compiler error
- d) None of the above

27. What is the output of C program with structures.?

```
int main()
{
 struct ship
 {
 char color[10];
 }boat1, boat2;
 strcpy(boat1.color,"RED");
 printf("%s ",boat1.color);
 boat2 = boat1;
 strcpy(boat2.color,"YELLOW");
 printf("%s",boat1.color);
 return 0;
}
```

- a) RED RED
- b) RED YELLOW
- c) YELLOW YELLOW
- d) Compiler error

28. What is the output of C program with structures.?

```
int main()
{
 structure hotel
 {
 int items;
 char name[10];
 }a;
 strcpy(a.name, "TAJ");
 a.items=10;
 printf("%s", a.name);
 return 0;
}
```

- a) TAJ  
b) Empty string  
c) **Compiler error**  
d) None of the above
29. What is the size of the below C structure in TurboC?

```
int main()
{
 struct books{
 int pages;
 char str[4];
 }b;
 printf("%d", sizeof(b));
 return 0;
}
```

- a) 5  
b) **6**  
c) 7  
d) 8
30. What is actually passed if you pass a structure variable to a function.?
- a) **Copy of structure variable**  
b) Reference of structure variable  
c) Starting address of structure variable  
d) Ending address of structure variable