

UNIT –I : FUNDAMENTALS OF C-PROGRAMMING**Short Answer (2 mark) Questions**

1. Write difference between algorithm and flowchart.
2. Explain the importance of C language.
3. What is format specifier?
4. Define keyword, constant and variable.
5. Write a short note on type casting.
6. Explain sizeof() with example?
7. Why do we use header files?
8. Define relational operator?
9. What is the purpose of adding comments in a program?
10. Differentiate between computer software and hardware?

Essay Answer (10 mark) Questions

1. Describe in detail about computer hardware and software. [10]
2. Write detailed notes on C data types. [10]
3. Write an algorithm, flowchart and C program to find the sum of numbers from 1 to n.
4. Discuss about the following operators in C language with example. [4+3+3]
 - a. Bitwise operators
 - b. Increment and decrement operators
 - c. Logical operators
5. Perform the following operations [2+2+2+2+2]
 - a. $23 \gg 3$
 - b. $27 \ll 2$
 - c. $15 \& 9$
 - d. $15 \wedge 9$
 - e. $15 \mid 9$
6. (a) Write the structure of C program and explain. [5+5]
(b) Write a program to perform swapping of two numbers without using temporary variable.
7. (a) Define algorithm. Write algorithm for finding factorial of a number. [4+6]
(b) What is flowchart? Explain different symbols used for flowchart.
8. (a) What is constant? Explain different constants in C. [6+4]
(b) What is variable? Give the rules for variable declaration.
9. (a) Write an algorithm and flowchart to generate Fibonacci series of numbers up to 'n'.
(b) Draw the flowchart to find the greatest of three numbers. [5+5]
10. (a) Write an algorithm and flowchart to find whether the given number is prime or not. (b)
Explain about type conversion in C. [5+5]

UNIT –II : DECISION & LOOP CONTROL STATEMENTS

Short Answer (2 mark) Questions

1. Classify the different types of decision making statements.
2. How switch case works without break statement.
3. Write the syntax for nested if and else-if ladder?
4. Write a program to check whether the person is eligible to vote.
5. Write and explain syntax of -for|| loop.
6. Distinguish between while and do-while statements.
7. Write a program to print the multiplication table from 1 to n?
8. Differentiate between break and continue.
9. Define goto with an example.
10. Define exit and return statements.

Essay Answer (10 mark) Questions

1. Explain various branching statements in C with examples. [10]
2. (a) Write and explain about switch statement. [4+6]
(b) Write a Program to perform arithmetic operations using switch.
3. List and explain loop control (or) iteration statements in C. [10]
4. (a) Write and explain syntax of -for|| loop. [3+7]
(b) Write a program to generate prime numbers between 1 and n.
5. (a) Write a program to check whether the given number is palindrome or not. [5+5]
(b) Write a program to check whether the given number is -Even|| or -Odd|| using GOTO statement.
6. List and explain unconditional statements in C with examples. [10]
7. (a) Write a program to find sum of the individual digits of a given number. [5+5]
(b) Write a program to find the sum of even and odd numbers from 1 to n.
8. (a) Write a program to find the factorial of a given number. [5+5]
(b) Write a program to generate n Fibonacci numbers.
9. (a) What is a nested loop? Write a program to display multiplications tables from 1 to n.
(b) Write a program to display the following pattern.(ALL CLASS & LAB) [5+5]
10. (a) Explain else-if ladder with the help of flowchart and program. [5+5]
(b) How does nested if-else works explain with an example?

UNIT –III : Functions

Short Answer (2 mark) Questions

1. What is a function? Write the types of functions.
2. What is meant by call-by value and call-by reference?
3. What is recursion?
4. Write and explain the syntax of function?
5. What is #include, #define directives.

Essay Answer (10 mark) Questions

1. (a) What are the advantages of functions? [3+7]
(b) Write a C program using function to exchange two numbers using pointers.
2. (a) Discuss about the different categories of functions. [5+5]
(b) Write a C program to illustrate call-by-value parameter passing technique.
3. (a) Write short notes on nested functions. [4+6]
(b) Write a C program to explain call-by-reference parameter passing technique.
4. (a) What is recursion? What are the advantages and Disadvantages of recursion? [4+6]
(b) Write a C program to find the factorial of a given number using recursion.
5. Distinguish between the following: [4+3+3]
 - a. Actual and formal arguments
 - b. Global and local variables
 - c. Automatic and static variables

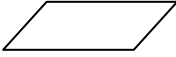
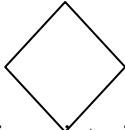
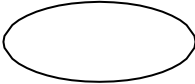

UNIT-1 : FUNDAMENTALS OF C-PROGRAMMING(MCQ)

1. Which of the following is used to perform computations on the entered data?
(A) Memory (B) **Processor** (C) Input device (D) Output device
2. Which of the following is not an input device?
(A) **Plotter** (B) Scanner (C) Keyboard (D) Mouse
3. Which of the following is not an output device?
(a) Plotter (b) **Scanner** (c) Printer (d) Speaker
4. Which of the following is used as a primary memory of the computer?
(a) Magnetic storage device (b) **RAM**
(c) Optical storage device (d) Magneto-optical storage device
5. Which one of the following is a volatile memory?
(a) **RAM** (b) Auxiliary memory (c) ROM (d) Secondary memory
6. Software is defined as
(a) Set of memory cells (b) **Set of Programs** (c) Set of hardware (d) None

7. Which statement is a valid?

- (a) **1KB=1024 bytes** (b) 1 MB=2018 bytes
(c) 1 MB=10000 kilobytes (d) 1 KB=100 bytes

8. _____ symbol is used for input/output in flowchart

- (a)  (b)  (c)  (d) 

9. Which of the following is a pictorial representation of an algorithm?

- (a) Program (b) **Flowchart** (c) Algorithm (d) Pseudo code

10. Among the following, which converts assembly language into machine language

- (a) Interpreter (b) Compiler (c) **Assembler** (d) Algorithm

11. Which one of the following is known as the -language of computer?

- (a) Programming language (b) High-level language
(c) **Machine language** (d) Assembly language

12. _____ translates high level language into machine language

- (a) **Compiler** (b) Translator (c) Processor (d) Loader

13. Which of the following is not a valid variable declaration

- (a) **int 2class;** (b) int class2; (c) int class_2; (d) int ELSE;

14. The range of -unsigned int data type is _____

- (a) -32768 to 32767 (b) **0 to 65535** (c) -65536 to 65535 (d) -128 to 127

15. The size of -long double data type in 16-bit machine is _____

- (a) 8 bytes (b) **10 bytes** (c) 2 bytes (d) 4 bytes

16. The range of -char data type is _____

- (a) **-128 to 127** (b) 0 to 255 (c) -32768 to 32767 (d) None

17. The size of -char data type is _____

- (a) **1 byte** (b) 2 bytes (c) 4 bytes (d) 10 bytes

18. The format specifier that is used to read or write a character is _____

- (a) %f (b) %d (c) **%c** (d) %s

19. Which one of the following is a string constant

- (a) _3' (b) **"hello"** (c) 30 (d) None

20. If no precision is specified for floating point number then printf() prints _____ decimal positions.

- (a) Two (b) Four (c) **Six** (d) Zero

21. What is the result of $8 \mid 4$?

- (a) 0 (b) 1 (c) 4 (d) **12**

22. Which of the following operator is used to combine two or more relational expressions

- (a) ^ (b) ~ (c) & (d) **&&**

23. $\sim(100111)$ gives _____

- (a) 010010 (b) **011000** (c) 010100 (d) 111001

24. $10 \ll 3$ gives _____

- (a) 40 (b) 1 (c) **80** (d) 30

25. Shifting a number _n_ by _s_ bits to left is equivalent to which of the following?

- (a) $2^s/n$ (b) $n/2^s$ (c) s^2/n (d) **$n*2^s$**

26. Shifting a number _n_ by _s_ bits to right is equivalent to which of the following?

- (a) $2^s/n$ (b) **$n/2^s$** (c) s^2/n (d) $n*2^s$

27. Based on the precedence levels and associativity the $8+4*5+6/2$ expression yields

- (a) 43 (b) 34 (c) **31** (d) 41
28. _____ operators are used for shifting bits to right and left
 (a) >> **and** << (b) > and < (c) ?and : (d) None
29. The expression a++ is referred as
 (a) Pre increment (b) **Post increment** (c) Before increment (d) After increment
30. The expression ++a referred as
 (a) **Pre increment** (b) Post increment (c) Before increment (d) After increment
31. If a=3, b=5 the value of the expression ++a+b++ is_____
 (a) 10 (b) **9** (c) 8 (d) None of the above
32. _____ defines the order of evaluation when operators have the same precedence
 (a) Priority (b) Precedence (c) **Associativity** (d) None of the above
33. Which one of the following is having highest precedence
 (a) ++ (b) && (c) () (d) ,
34. Which one of the following is having least precedence
 (a) ++ (b) && (c) () (d) ,
35. String constants are enclosed in
 (a) == (b) **“ “** (c) () (d) []
36. Character constants are enclosed in
 (a) **„ „** (b) — — (c) () (d) []
37. The escape sequence character ___causes the cursor to move to the next line on the screen
 (a) \t (b) **\n** (c) \r (d) \v
38. The assignment statement —sum=sum+i;|| is equivalent to
 (A) sum+=i; (B) **sum+=i;** (C) sum= =sum+i; (D) None
39. sizeof() operator returns the size of an operand in _____
 (A) Bits (B) Nibble (C) **Bytes** (D) None
40. Which of the following is the correct way of using type casting
 (A) **c=(int)a/b;** (B) c=a(int)/b; (C) c=int a/b; (D) None

UNIT-2 : DECISION & LOOP CONTROL STATEMENTS

- Which of the following is not a loop structure?
 (a) for (b) do-while (c) **repeat-until** (d) while
- If statement is a _____statement
 (a) One-way decision (b) Multi-way decision (c) **Two way decision** (d) Loop construct
- __break__ statement in a loop is used for
 (a) **Terminating the loop** (b) De-allocating memory
 (c) Terminating the program (d) Terminating the function
- The keyword -else|| can be used with
 (a) for statement (b) do.. while () statement (c) **if statement** (d) switch () statement
- The two different ways to implement a multiway selection in C are
 (a) Simple if and if-else (b) if-else and nested if-else
 (c) **else-if ladder and switch** (d) None
- The minimum number of time that a do-while loop executes
 (a) 0 (b) **1** (c) infinitely (d) variable

7. The while loop is terminated when the conditional expression returns
 (a) 1 (b) 2 (c) 3 (d) **Zero**
8. C provides _____ as a convenient alternative to the traditional if-else for two way selection.
 (a) **Conditional operator** (b) Short hand assignment (c) Increment (d) None
9. The statement used to send back any value to the calling function is
 (a) **break** (b) continue (c) exit (d) **return**
10. The _____ statement is used to skip the remaining part of the statements in a loop and continue with next iteration.
 (a) break (b) goto (c) **continue** (d) exit
11. _____ should be avoided as part of structured programming approach
 (a) break (b) **goto** (c) continue (d) exit
12. The minimum number of times -for|| loop executes
 (a) 2 (b) can't be predicted (c) **0** (d) 1
13. What will be output when you will execute following c code?

```
void main()
{
    int fruit=1;
    switch(fruit+2)
    {
        default:printf("apple");
        case 4: printf(" banana");
        case 5: printf(" orange");
        case 8: printf(" grape");
    }
}
```

- (a) **applebanana orange grape** (b) grape (c) orange (d) banana orange grape
14. Which for loop has range of similar indexes of 'i' used in for (i = 0; i < n; i++)?
 (a) for (i = n; i > 0; i--) (b) for (i = n; i >= 0; i--)
 (c) for (i = n-1; i > 0; i--) (d) **for (i = n-1; i > -1; i--)**
15. What will be output when you will execute following C code?

```
void main()
{
    int check=2;
    switch(check)
    {
        case 2: printf("1");
                break;
        case 3: printf(" 2");
                break;
    }
}
```

- (a) 12 (b) 2 (c) **1** (d) Compilation error
16. Which one among the following is the correct syntax of for loop?
 (a) **for(i=0;i<n;i++);** (b) for(i<n;i=0;i++);

(c) for(i=0;i<n;i++); (d) None

17. `_for` loop in C program , if the condition is missing

(a) assumed to be present and taken to be false

(b) assumed to be present and taken to be true

(c) syntax error

(d) execution will be terminated abruptly

18. if c is initialized to 1, how many times following loop is executed

While((c>0)&&(c<60))

{ c++; }

(a) 60 **(b) 59** (c) 61 (d) 1

19. The library function exit () causes an exit from

(a) loop (b) block (c) function **(d) None**

20. break statement can use with

i) loop ii) switch iii) block

(a) only i, ii (b) only ii, iii (c) only i, iii (d) All

21. What is the output of this C code?

```
int main()
```

```
{
```

```
while ()
```

```
printf("In while loop ");
```

```
printf("After loop\n");
```

```
}
```

(a) In while loop after loop (b) After loop **(c) Compile time error** (d) Infinite loop

22. Which among the following is not checked in switch case

(a) character (b) integer **(c) float** (d) None

23. What is the output of the following program

```
main()
```

```
{
```

```
    int i;
```

```
    for(i=1;i<5;i++)
```

```
    {    if(i==3)
```

```
        break;
```

```
        Printf("%d\\",i);
```

```
    }
```

```
}
```

(a) 12345

(b) 124

(c) 1245

(d) 12

24. What is the output of the following program

```
main()
```

```
{
```

```
    int i;
```

```
    for(i=1;i<5;i++)
```

```
    {
```

```
        if(i==3)
```

```
            continue;
```

```
        Printf("%d\\",i);
```

```
    }
```

- }
 (a) 12345 (b) **124** (c) 1245 (d) 12

25. What are the entry controlled loops among the following

- i. while ii. Do-while iii. For
 (a) only i (b) only ii,iii (c) only iii (d) **only i, iii**

26. What is the output of the following program?

```
main()
{
    int i=1;
    while(i<=5)
        printf("%d\\",i);
```

- }
 (a) 12345 (b) 1234 (c) 2345 (d) **Leads to infinite loop**

27. for(;;) can be terminated by

- (a) break (b) exit(0) (c) return (d) **All the above**

28. What is the output of the following program

```
main()
{
    for(i=1;i<=5;i++);
    printf("%d\\",i);
}
```

- (a) 12345 (b) 1234 (c) **6** (d) leads to infinite loop

29. What is the correct syntax of for loop

- (a) **for(i=0;i<n;i++){ }** (b) for(i<n;i=0;i++){ }
 (c) for(i=0;i<n:i++){ } (d) for(i=0;i<n:i++){ }

30. Array is an example of which of the following?

- (a) **Derived types** (b) Fundamental types (c) User-defined types (d) None

31. Which of the following is used to display a string on the screen?

- (a) **%s** (b) %c (c) %d (d) %f

32. What is the final value of x when the code int x; for(x=0; x<10; x++) { } is run?

- (a) **10** (b) 9 (c) 0 (d) 1

33. Which of the following is exit controlled loop

- (a) for (b) while (c) **do-while** (d) None

34. The default statement is executed when

- (a) **All the case statements are false** (b) One of the case is true
 (c) One of the case is false (d) None

35. How many times the following C code prints —Hello\\

```
int main()
{
    while (1)
    printf("Hello ");
}
```

- (a) One (b) zero (c) **Infinite** (d) Produce error

36. How many times the following C code prints —Hello\\

```
int main()
```



```

{
do
{
printf("Hello ");
}while(0);
}

```

- (a) **One** (b) zero (c) Infinite (d) Produce error

37. How many bytes the array **price** occupies. float price[10];

- (a) 10 bytes (b) 4 bytes (c) **40 bytes** (d) 20 bytes

38. Which of the following is syntactically correct?

- (a) for(); (b) for(;); (c) for(.); (d) **for(;;);**

39. What is the output of the following code

```

main()
{
    int a= 0,b = 20;
    char x =1,y =10;
    if(a,b,x,y)
        printf("hello");
}

```

- (a) Syntax error (b) **hello** (c) 10 (d) None

40. is used to terminate from the entire program

- (a) return (b) break (c) **exit** (d) goto

UNIT-3 : Arrays and Functions

1. Array is an example of which of the following?

- (a) **Derived types** (b) fundamental types (c) user-defined types (d) None

2. Array elements are stored in

- (a) Scattered memory locations (b) **Sequential memory locations**
(c) Direct memory locations (d) None

3. int a[10] will reserve how many locations in the memory?

- (a) **10** (b) 9 (c) 11 (d) None of the above

4. Which one of the following is the correct syntax for initialization of one-dimensional arrays?

- (a) int num[3]={0 0 0}; (b) **int num[3]={0,0,0};**
(c) int num[3]={0;0;0}; (d) int num[3]=0;

5. Under which of the following conditions, the size of the array need not be specified? (a) When the compiler is smart (b) **When initialization is a part of definition** (c) Both

(d) None

6. Which of following is correct array declaration

- A) int num(25); B) int array num[25]; C) **int num[25];** D) num[25];

7. Array subscripts in C starts from

- A) **0** B) compiler dependent C) 1 D) -1

8. Array elements are stored in

- A) Column major order B) in diagonal order

C) **Row major order**

D) either in row major or column major order

9. Which of the following statements is used to read a string of characters into the array **words**?
- A) `scanf(-%d\\, words);` B) `scanf(\\% \\n\\, words);`
C) **`scanf(“%s”, words);`** D) `scanf(- %c\\, words);`
10. A string constant is one dimensional array of characters terminated by a
- A) Comma B) Full stop C) Semicolon **D) Null character (,\\0“)**
11. Which of the following multi-dimensional array declaration is correct for realizing a 2 X 3 matrix
- (a) **`int m[2][3];`** (b) `int m[3][2];` (c) `int m[3],m[2];` (d) None
12. Which of the following is the correct syntax for initialization of two-dimensional arrays?
- (a) **`table[2][3]={0,0,0,1,1,1}`** (b) `table[2][3]={ {0,0,0},{1,1,1} }`
(c) `table[2][3]={0,1},{0,1}{0,1}` (d) None
13. What will be assigned for marks[3] and marks[4] in the following initialization
`int marks[5]={30,45,80};`
- (a) 80 and garbage (b) garbage and garbage **(c) 0 and 0** (d) None
14. Which of the following is correct initialization of string TITAN
- (a) `char name[]=\\TITAN\\0\\` (b) `char name[10]=\\TITAN\\0\\`
(c) `char name[]=“TITAN”` (d) `char name[10]={-TITAN\\}`
15. Which of the following initialization is wrong
- (a) `x[5]=15` **(b) `x[10.3]=30`** (c) `x[0]=20` (d) None
16. `char ch[]={_a‘,‘b‘,‘c‘,‘\\0‘};`
`int sum=ch[1]+ch[2];`
What is the value of sum?
- (a) 195 **(b) 197** (c) ab (d) error
17. What happens if we initialize an array as `int group[20]={0};`
- (a) Produce an error (b) Only 0th element is initialized with zero
(c) Every element is initialized with zero (d) None
18. To store a table of values which of the following is used
- (a) One dimensional array** **(b) Two dimensional array**
(c) Three dimensional array (d) None
19. `int rank[3]={3,2,4,1,5};`
- (a) Compile time error** (b) Initializes only 3 elements with first 3 values
(c) Initializes only 3 elements with last 3 values (d) Initialize all elements with zeros
20. How to refer an element in ith row jth column of a two dimensional array
- (a) `x[i,j]` **(b) `x[i][j]`** (c) `x[ij]` (d) `x[i]x[j]`
21. A function can be called in a program
- A. Only two times B. Only once **C. Any number of times** D. Only three times
22. When you pass an array as an argument to a function, what actually gets passed
- A. **Address of the array** B. Values of the elements of the array
C. Number of elements of the array D. None
23. The statement used to send back any value to the calling function is

- A. break B. continue C. exit **D. return**
24. The function sqrt() is part of header file.
A. conio.h B. stdio.h **C. math.h** D. iostream.h
25. A function can return only ____ value
A. Zero **B. One** C. two D. three
26. Actual and formal parameters must agree in
A. Data types **B. Number of arguments and Data types**
C. Names and Data type D. None
27. Any function can be called from any other function. This statement is
A. **True sometimes** B. Neither true nor false C. False D. True
28. The header file that must be included at the beginning of a C program to use a library function cos() is
A. stdlib.h B. conio.h C. dos.h **D. math.h**
29. _____ function is said to be function calling itself.
A. Call by reference B. Call by value **C. Recursive** D. All above
30. void funct (void);
The above function declaration indicates
A. it returns a value and had arguments B. it returns nothing and had arguments C. it returns a value and no arguments **D. it returns nothing and no arguments**
31. The parameters of the called function(function definition) are called
A. Casual parameters **B. formal parameters** C. usual parameters D. actual parameter
32. Recursion means
calling same function B. Function calling a function
C. Both D. None
33. A function is one that returns no value has ____ return type
A. **Void**
B. Integer C. Float D. Recursive
34. The parameters in a function call are
A. Real parameters B. Formal parameters **C. Actual parameters** D. Dummy parameters
35. Based on arguments and return types, functions are classified into
A. 1 type B. 2 types C. 3 types **D. 4 types**
36. Maximum number of arguments can be passed to a function are
A. 2 B. 3 C. 4 **D. Any**
37. The default parameter passing mechanism is
(a) **Call by value** (b) Call by reference (c) Call by name (d) None
38. Any C program ____
(a) **Must contain at least one function** (b) need not contain any function
(c) Needs input data (d) None
39. Call by reference is also known as
(a) **Call by address or Call by location** (b) Call by address or Call by value
(c) Call by value or Call by name (d) None
40. Determine output:
main()
{
 int i=abc(10);
 printf("%d\\n",--i);
}
int abc(int i)
{ return(i++); }

(a) 10

(b) 9

(c) 11

(d) None