

2 MARKS

1. What are the different data types available in 'C'?

There are four basic data types available in 'C'.

1. int
 2. float
 3. char
 4. double
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2. What are Keywords?

Keywords are certain reserved words that have standard and pre-defined meaning in 'C'. These keywords can be used only for their intended purpose.

3. What is an Operator and Operand?

An operator is a symbol that specifies an operation to be performed on operands.

Example: *, +, -, / are called arithmetic operators.

The data items that operators act upon are called operands.

Example: a+b; In this statement a and b are called operands.

4. What is Ternary operators or Conditional operators?

Ternary operators is a conditional operator with symbols ? and :

Syntax: variable = exp1 ? exp2 : exp3

If the exp1 is true variable takes value of exp2. If the exp2 is false, variable takes the value of exp3.

5. What are the Bitwise operators available in 'C'?

& - Bitwise AND

| - Bitwise OR

~ - One's Complement

>> - Right shift

<< - Left shift

^ - Bitwise XOR are called bit field operators

Example: $k = \sim j$; where \sim take one's complement of j and the result is stored in k .

6. What are the logical operators available in 'C'?

The logical operators available in 'C' are

&& - Logical AND

|| - Logical OR

! - Logical NOT

7. What is the difference between Logical AND and Bitwise AND?

Logical AND (&&): Only used in conjunction with two expressions, to test more than one condition. If both the conditions are true the returns 1. If false then return

0.

AND (&): Only used in Bitwise manipulation. It is a unary operator.

8. What is the difference between '=' and '==' operator?

Where = is an assignment operator and == is a relational operator.

Example:

while (i=5) is an infinite loop because it is a non zero value and while (i==5) is true only when $i=5$.

9. What is type casting?

Type casting is the process of converting the value of an expression to a particular data type.

Example:

`int x,y;`

`c = (float) x/y;` where a and y are defined as integers. Then the result of x/y is converted into float.

10. What is conversion specification?

The conversion specifications are used to accept or display the data using the INPUT/OUTPUT statements.

11. What is the difference between 'a' and "a"?

'a' is a character constant and "a" is a string.

12. What is the difference between if and while statement?

if	while
(i) It is a conditional statement	(i) It is a loop control statement
(ii) If the condition is true, it executes some statements.	(ii) Executes the statements within while block if the condition is true.
(iii) If the condition is false then it stops the execution the statements.	(iii) If the condition is false the control is transferred to the next statement of the program.

13. What is the difference between while loop and do...while loop?

In the while loop the condition is first executed. If the condition is true then it executes the body of the loop. When the condition is false it comes out of the loop. In the do...while loop first the statement is executed and then the condition is checked. The do...while loop will execute at least one time even though the condition is false at the very first time.

14. What is a Modulo Operator?

'%' is modulo operator. It gives the remainder of an integer division

Example:

a=17, b=6. Then c=%b gives 5.

15. How many bytes are occupied by the int, char, float, long int and double?

int - 2 Bytes

char - 1 Byte float - 4 Bytes long int - 4 Bytes double - 8 Bytes

16. What are the types of I/O statements available in 'C'?

There are two types of I/O statements available in 'C'.

- Formatted I/O Statements
 - Unformatted I/O Statements
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17. What is the difference between ++a and a++?

++a means do the increment before the operation (pre increment) a++

means do the increment after the operation (post increment) **Example:**

```
a=5;
```

```
x=a++; /* assign x=5*/
```

```
y=a; /*now y assigns y=6*/
```

```
x=++a; /*assigns x=7*/
```

18. What is a String?

String is an array of characters.

19. What is a global variable?

The global variable is a variable that is declared outside of all the functions. The

global variable is stored in memory, the default value is zero. Scope of this variable is available in all the functions. Life as long as the program's execution doesn't come to an end.

20. What are the Escape Sequences present in 'C'?

\n - New Line

\b - Backspace

\t - Form feed

\' - Single quote

\\ - Backspace

\t - Tab

\r - Carriage return

\a - Alert

\\" - Double quotes

21. Construct an infinite loop using while?

```
while (1)
```

```
{  
}
```

Here 1 is a non zero, value so the condition is always true. So it is an infinite loop.

22. What will happen when you access the array more than its dimension?

When you access the array more than its dimensions some garbage value is stored in the array.

23. Write the limitations of getchar() and scanf() functions for reading strings (JAN 2009)

getchar()

To read a single character from stdin, then getchar() is the appropriate.

scanf()

scanf() allows to read more than just a single character at a time.

24. What is the difference between scanf() and gets() function?

In scanf() when there is a blank was typed, the scanf() assumes that it is an end.

gets() assumes the enter key as end. That is gets() gets a new line (\n) terminated string of characters from the keyboard and replaces the '\n' with '\0'.

25. What is a Structure?

Structure is a group name in which dissimilar data's are grouped together.

26. What is meant by Control String in Input/Output Statements?

Control Statements contains the format code characters, specifies the type of data that the user accessed within the Input/Output statements.

27. What is Union?

Union is a group name used to define dissimilar data types. The union occupies only the maximum byte of the data type. If you declare integer and character, then the union occupies only 2 bytes, whereas structure occupies only 3 bytes.

28. What is the output of the programs given below?

```
main() main()
{ {
float a; float a;
int x=6, y=4; int x=6, y=4;
a=x\y; a=(float) x\y;
printf(“Value of a=%f”, a); printf(“Value of a=%f”,a);
} }
```

Output: Output:

1. 1.500000

29. Declare the Structure with an example?

```
struct name
{
char name[10];
int age;
float salary;
} e1, e2;
```

30. Declare the Union with an example?

```
union name
{
char name[10];
int age;
```

```
float salary;  
} e1, e2;
```

31. What is the output of the following program when, the name given with spaces?

```
main()  
{  
char name[50]; printf("\n name\n"); scanf("%s", name);  
printf("%s",name);  
}
```

Output:

Lachi (It only accepts the data upto the spaces)

32. What is the difference between while(a) and while(!a)?

while(a) means while(a!=0)
while(!a) means while(a==0)

33. Why we don't use the symbol '&' symbol, while reading a String through scanf()?

The '&' is not used in scanf() while reading string, because the character variable itself specifies as a base address.

Example: name, &name[0] both the declarations are same.

34. What is the difference between static and auto storage classes?

	Static	Auto
Storage	Memory	Memory

Initial value	Zero	Garbage value
Scope	Local to the block in which the variables is defined	Local to the block defined.
Life	Value of the variable persists between different function calls.	The block in which variable is defined

35. What is the output of the program?

main()		increment()
{		{
increment();		static int i=1;
increment();		printf(“%d\n”,i)
increment(); }		i=i+1; }
OUTPUT: 1 2	3	

36. Why header files are included in ‘C’ programming?

- This section is used to include the function definitions used in the program.
 - Each header file has ‘h’ extension and include using ‘# include’ directive at the beginning of a program.
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37. List out some of the rules used for ‘C’ programming.

- All statements should be written in lower case letters. Upper case letters are only for

symbolic constants.

- Blank spaces may be inserted between the words. This improves the readability of statements.

- It is a free-form language; we can write statements anywhere between ‘{‘ and ‘}’. $a = b + c$;

$d = b * c$;

(or)

$a = b + c$; $d = b * c$;

- Opening and closing braces should be balanced.

38. Define delimiters in ‘C’.

	Delimiters	Use
:	Colon Semicolon Parenthesis Square Bracket Curly Brace Hash Comma	Useful for label
;		Terminates Statement
() []		Used in expression and function
{ }		Used for array declaration
#		Preprocessor directive
,		Variable

39. What do you mean by variables in ‘C’?

- A variable is a data name used for storing a data value.

- Can be assigned different values at different times during program execution.

- Can be chosen by programmer in a meaningful way so as to reflect its function in the program.

- Some examples are: Sum percent_1 class_total

40. List the difference between float and double datatype.

S No	Float	Double Float / Double
1	Occupies 4 bytes in memory	Occupies 8 bytes in mem
2	Range : 3.4 e-38 to 3.8e+38	Range : 1.7 e-308 to 1.7e
3	Format Specifier: % f	Format Specifier: % lf
4	Example : float a;	Example : double y; There exists long double -4932 to 3.4 e +4932 and memory. Example: long double k;

41. Differentiate break and continue statement

S No	break	continue
1	Exits from current block / loop	Loop takes next iteration
2	Control passes to next statement	Control passes to beginn
3	Terminates the program	Never terminates the pro

42. List the types of operators.

S No	Operators Types	Symbolic Representation
1		= , - , * , / and %
2	Arithmetic operators	> , < , == , >= , <= and !=
3	Relational operators	&& , and !
4	Logical operators	++ and -
5	Increment and Decrement operators	= , + = , - = , * = , / = , ^ = ,
6	Assignment operators Bitwise	& , , ^ , >> , << , and ~
7	operators Comma operator	,
8	Conditional operator	? :

**43. Distinguish between while..do and do..while statement in C.
(JAN 2009)**

While..DO

DO..while

(i) Executes the statements within the while block if only the condition is true.	(i) Executes the statements within the while block at least once.
(ii) The condition is checked at the starting of the loop	(ii) The condition is checked at the end of the loop

44. Compare switch() and nestedif statement.

S No	switch() case	nested if
1	Test for equality ie., only constant values are applicable.	It can equate relational expressions
2	No two case statements in same switch.	Same conditions may be used number of times.
3	Character constants are automatically converted to integers.	Character constants are not converted to integers.
4	In switch() case statement nested if can be used.	In nested if statement nested if can be used.

45. Distinguish Increment and Decrement operators.

S No	Increment ++	Decrement --
1	Adds one to its operand	Subtracts one from its operand
2	Equivalent $x = x + 1$	Equivalent $x = x - 1$
3	Either follow or precede operand	Either follow or precede operand
4	Example : ++x; x++;	Example : --x; x--;

46. Give the syntax for the 'for' loop statement for (Initialize counter; Test condition; Increment / Decrement)

```
{  
statements;  
}
```

- Initialization counter sets the loop to an initial value. This statement is executed only once.
- The test condition is a relational expression that determines the number of iterations desired or it determines when to exit from the loop. The 'for' loop continues to execute as long as conditional test is satisfied. When condition becomes false, the control of program exits the body of the 'for' loop and executes next statement after the body of the loop.
- The increment / decrement parameter decides how to make changes in the loop.
- The body of the loop may contain either a single statement or multiple statements.

47. What is the use of sizeof () operator?

- The sizeof () operator gives the bytes occupied by a variable.
- No of bytes occupied varies from variable to variable depending upon its data types.

Example:

```
int x,y;  
printf(“%d”,sizeof(x));
```

Output:

2

48. What is a loop control statement?

Many tasks done with the help of a computer are repetitive in nature. Such tasks can be done with loop control statements.

49. What are global variable in ‘C’?

- This section declares some variables that are used in more than one function. such variable are called as global variables.
 - It should be declared outside all functions.
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50. Write a program to swap the values of two variables (without temporary variable).

```
#include <stdio.h>  
#include <conio.h>  
void main( )  
{  
int a =5; b = 10;  
clrscr( );  
printf(“Before swapping a = %d b = %d “, a , b);  
a = a + b; B = a – b;  
a = a – b;  
printf(“After swapping a = %d b = %d”, a,b);  
getch( );
```

}

Output:

Before swapping a = 5 b = 10

After swapping a = 10 b = 5

51. Write short notes about main () function in 'C' program.

(MAY 2009)

- Every C program must have main () function.
 - All functions in C, has to end with '(' parenthesis.
 - It is a starting point of all 'C' programs.
 - The program execution starts from the opening brace '{' and ends with closing brace '}', within which executable part of the program exists.
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