

# C programming Interview questions and answers

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[Operators questions](#)
[Control flow questions](#)
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[Looping questions](#)
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[String questions](#)
[Printf,Scanf questions](#)
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## C questions answers

### Sample c questions and answers with explanation for interview

1.

What will be output if you will compile and execute the following c code?

```
void main(){
    int i=320;
    char *ptr=(char *)&i;
    printf("%d",*ptr);
}
```

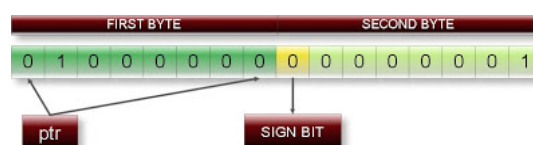
- (A) 320 ☐
- (B) 1 ☐
- (C) 64 ☒
- (D) Compiler error ☐
- (E) None of above ☐

Answer

### Explanation:

As we know size of int data type is two byte while char pointer can pointer one byte at time.

Memory representation of int i=320



So char pointer ptr is pointing to only first byte as shown above figure.

\*ptr i.e. content of first byte is 01000000 and its decimal



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value is 64.

How to represent char, int and float data in memory?

Data type tutorial.

2.

What will be output if you will compile and execute the following c code?

```
#define x 5+2
void main(){
    int i;
    i=x*x*x;
    printf("%d",i);
}
```

- (A) 343 ☐
- (B) 27 ☐
- (C) 133 ☒
- (D) Compiler error ☐
- (E) None of above ☐

Answer

## Explanation:

As we know #define is token pasting preprocessor it only paste the value of macro constant in the program before the actual compilation start. If you will see intermediate file you will find:

```
test.c 1:
test.c 2: void main(){
test.c 3: int i;
test.c 4: i=5+2*5+2*5+2;
test.c 5: printf("%d",i);
test.c 6: }
test.c 7:
```

You can absorb #define only pastes the 5+2 in place of x in program. So,  
 $i = 5 + 2 * 5 + 2 * 5 + 2$   
 $= 5 + 10 + 10 + 2$   
 $= 27$

What is intermediate file and how to see intermediate file?  
 Preprocessor tutorial.

3.

What will be output if you will compile and execute the following c code?

```
void main(){
    char c=125;
    c=c+10;
    printf("%d",c);
}
```

- (A) 135 ☐
- (B) +INF ☐
- (C) -121 ☐
- (D) -8 ☐
- Compiler error ☐

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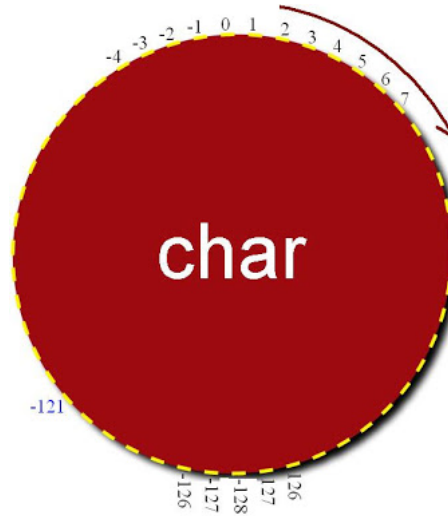
G+1 137

(E)

Answer

**Explanation:**

As we know char data type shows cyclic properties i.e. if you will increase or decrease the char variables beyond its maximum or minimum value respectively it will repeat same value according to following cyclic order:



So,

125+1= 126

125+2= 127

125+3=-128

125+4=-127

125+5=-126

125+6=-125

125+7=-124

125+8=-123

125+9=-122

**125+10=-121**

What is cyclic nature of data type?

Data type tutorial.

4.

What will be output if you will compile and execute the following c code?

```
void main(){
    float a=5.2;
    if(a==5.2)
        printf("Equal");
    else if(a<5.2)
        printf("Less than");
    else
        printf("Greater than");
}
```

- (A) Equal ☐
- (B) Less than ☐
- (C) Greater than ☐
- (D) Compiler error ☐
- (E) None of above ☐

Answer

**Explanation:**

5.2 is double constant in c. In c size of double data is 8 byte while a is float variable. Size of float variable is 4 byte.

So double constant 5.2 is stored in memory as:

101.00 11001100 11001100 11001100 11001100 11001100 11001101

Content of variable a will store in the memory as:

101.00110 01100110 01100110

It is clear variable a is less than double constant 5.2

Since 5.2 is recurring float number so it different for float and double. Number likes 4.5, 3.25, 5.0 will store same values in float and double data type.

Note: In memory float and double data is stored in completely different way. If you want to see actual memory representation goes to question number (60) and (61).

[Data type tutorial.](#)

**5.**

What will be output if you will compile and execute the following c code?

```
void main(){
    int i=4,x;
    x=++i + ++i + ++i;
    printf("%d",x);
}
```


- (A) 21 ☐
- (B) 18 ☐
- (C) 12 ☐
- (D) Compiler error ☐
- (E) None of above ☐

Answer

**Explanation:**


In ++a, ++ is pre increment operator. In any mathematical expression pre increment operator first increment the variable up to break point then starts assigning the final value to all variable.

Step 1: Increment the variable I up to break point.



x = ++i + ++i + ++i  
5    5    6

Step 2: Start assigning final value 7 to all variable i in the expression.



x = ++i + ++i + ++i  
6    6    7

So, i=7+7+7=21

[What is break point?](#)

[Operator tutorial.](#)

6.

What will be output if you will compile and execute the following c code?

```
void main(){
    int a=2;
    if(a==2){
        a=~a+2<<1;
        printf("%d",a);
    }
    else{
        break;
    }
}
```

- (A) It will print nothing. ☐
- (B) -3 ☐
- (C) -2 ☐
- (D) 1 ☐
- (E) Compiler error ☐

Answer

**Explanation:**

Keyword break is not part of if-else statement. Hence it will show compiler error: Misplaced break

[Where we can use break keyword?](#)

[Control statement tutorial](#)

7.

What will be output if you will compile and execute the following c code?

```
void main(){
    int a=10;
    printf("%d %d %d",a,a++,++a);
}
```

- (A) 12 11 11 ☐
- (B) 12 10 10 ☐
- (C) 11 11 12 ☐
- (D) 10 10 12 ☐
- (E) Compiler error ☐

Answer

**Explanation:**

In c printf function follows cdecl parameter passing scheme. In this scheme parameter is passed from right to left direction.

```
printf("%d %d %d",a,a++,++a)
           3   2   1
```

So first ++a will pass and value of variable will be a=10 then a++ will pass now value variable will be a=10 and at the end a will pass and value of a will be a=12.

[What is cdecl and pascal parameter passing convention?](#)  
[Function tutorial.](#)

8.

What will be output if you will compile and execute the following c code?

```
void main(){
    char *str="Hello world";
    printf("%d",printf("%s",str));
}
```

- (A) 11Hello world ☐
- (B) 10Hello world ☐
- (C) Hello world10 ☐
- (D) Hello world11 ☐
- (E) Compiler error ☐

Answer

### Explanation:

Return type of printf function is integer and value of this integer is exactly equal to number of character including white space printf function prints. So, printf("Hello world") will return 13.

[What is prototype of printf function?](#)  
[Formatted I/O tutorial.](#)

9.

What will be output if you will compile and execute the following c code?

```
#include "stdio.h"
#include "string.h"
void main(){
    char *str=NULL;
    strcpy(str,"cquestionbank");
    printf("%s",str);
}
```

- (A) cquestionbank ☐
- (B) cquestionbank\0 ☐
- (C) (null) ☐
- (D) It will print nothing ☐
- (E) Compiler error ☐

Answer

### Explanation:

We cannot copy any thing using strcpy function to the character pointer pointing to NULL.

[String tutorial.](#)  
[More questions of string.](#)

10.

What will be output if you will compile and execute the following c code?

```
#include "stdio.h"
#include "string.h"
void main(){
    int i=0;
    for(;i<=2;)
        printf(" %d",++i);
}
```

- (A) 0 1 2 ☐
- (B) 0 1 2 3 ☐
- (C) 1 2 3 ☐
- (D) Compiler error ☐
- (E) Infinite loop ☐

Answer

### Explanation:

In for loop each part is optional.

[Complete tutorial of looping in C.](#)

11.

What will be output if you will compile and execute the following c code?

```
void main(){
    int x;
    for(x=1;x<=5;x++);
    printf("%d",x);
}
```

- (A) 4 ☐
- (B) 5 ☐
- (C) 6 ☐
- (D) Compiler error ☐
- (E) None of above ☐

Answer

### Explanation:

Body of for loop is optional. In this question for loop will execute until value of variable x became six and condition became false.

[Looping tutorial.](#)

12.

What will be output if you will compile and execute the following c code?

```
void main(){
printf("%d",sizeof(5.2));
}
```

- (A) 2 ☐
- (B) 4 ☐

- (C) 8 ☐
- (D) 10 ☐
- (E) Compiler error ☐

Answer

**Explanation:**

Default type of floating point constant is double. So 5.2 is double constant and its size is 8 byte.

[Detail explanation of all types of constant in C.](#)

**13.**

What will be output if you will compile and execute the following c code?

```
#include "stdio.h"
#include "string.h"
void main(){
    char c='\08';
    printf("%d",c);
}
```

- (A) 8 ☐
- (B) '8' ☐
- (C) 9 ☐
- (D) null ☐
- (E) Compiler error ☐

Answer

**Explanation:**

In c any character is starting with character '\\' represents octal number in character. As we know octal digits are: 0, 1, 2, 3, 4, 5, 6, and 7. So 8 is not an octal digit. Hence '\\08' is invalid octal character constant.

[Octal character constant.](#)

[Hexadecimal character constant.](#)

**14.**

What will be output if you will compile and execute the following c code?

```
#define call(x,y) x##y
void main(){
    int x=5,y=10,xy=20;
    printf("%d",xy+call(x,y));
}
```

- (A) 35 ☐
- (B) 510 ☐
- (C) 15 ☐
- (D) 40 ☐
- (E) None of above ☐

Answer



**Explanation:**

## is concatenation c preprocessor operator. It only concatenates the operands i.e.

a##b=ab

If you will see intermediate file then you will find code has converted into following intermediate code before the start of actual compilation.

Intermediate file:

test.c 1:

test.c 2: void main(){

test.c 3: int x=5,y=10,xy=20;

test.c 4: printf("%d",xy+xy);

test.c 5: }

test.c 6:

It is clear call(x, y) has replaced by xy.

What is macro call?

[Preprocessor tutorial.](#)

**15.**

What will be output if you will compile and execute the following c code?

```
int * call();
void main(){
    int *ptr;
    ptr=call();
    clrscr();
    printf("%d",*ptr);
}
int * call(){
    int a=25;
    a++;
    return &a;
}
```

- (A) 25 ☐
- (B) 26 ☐
- (C) Any address ☐
- (D) Garbage value ☐
- (E) Compiler error ☐

Answer

**Explanation:**

In this question variable a is a local variable and its scope and visibility is within the function call. After returning the address of a by function call variable a became dead while pointer ptr is still pointing to address of variable a. This problem is known as dangling pointer problem.

[Complete pointer tutorial.](#)

**16.**

What is error in following declaration?

```
struct outer{
    int a;
    struct inner{
```

```
char c;  
};  
};
```

- (A) Nesting of structure is not allowed in c. ☐
- (B) It is necessary to initialize the member variable. ☐
- (C) Inner structure must have name. ☐
- (D) Outer structure must have name. ☐
- (E) There is not any error. ☐

Answer

### Explanation:

It is necessary to assign name of inner structure at the time of declaration other wise we cannot access the member of inner structure. So correct declaration is:

```
struct outer{  
    int a;  
    struct inner{  
        char c;  
    }name;  
};
```

[Structure tutorial.](#)  
[Union tutorial.](#)

17.

What will be output if you will compile and execute the following c code?

```
void main(){  
    int array[]={10,20,30,40};  
    printf("%d",-2[array]);  
}
```

- (A) -60 ☐
- (B) -30 ☐
- (C) 60 ☐
- (D) Garbage value ☐
- (E) Compiler error ☐

Answer

### Explanation:

In c,  
 $\text{array}[2] = * (\text{array} + 2) = * (2 + \text{array}) = 2[\text{array}] = 30$   
[Array tutorial.](#)  
[Array of pointer.](#)  
[How to read complex pointers.](#)

18.

What will be output if you will compile and execute the following c code?

```
void main(){  
    int i=10;  
    static int x=i;  
    if(x==i)  
        printf("Equal");
```

```
else if(x>i)
printf("Greater than");
else
printf("Less than");
}
```

- (A) Equal ☐
- (B) Greater than ☐
- (C) Less than ☐
- (D) Compiler error ☐
- (E) None of above ☐

Answer

### Explanation:

static variables are load time entity while auto variables are run time entity. We can not initialize any load time variable by the run time variable.

In this example i is run time variable while x is load time variable.

[What is storage class?](#)

19.

What will be output if you will compile and execute the following c code?

```
#define max 5;
void main(){
    int i=0;
    i=max++;
    printf("%d",i++);
}
```

- (A) 5 ☐
- (B) 6 ☐
- (C) 7 ☐
- (D) 0 ☐
- (E) Compiler error ☐

Answer

### Explanation:

#define is token pasting preprocessor. If you will see intermediate file: test.i

test.c 1:

test.c 2: void main(){

test.c 3: int i=0;

test.c 4: i=5++;

test.c 5: printf("%d",i++);

test.c 6: }

test.c 7:

It is clear macro constant max has replaced by 5. It is illegal to increment the constant number. Hence compiler will show lvalue required.

[What is lvalue and rvalue?](#)

[How to see intermediate file?](#)

[Preprocessor questions and answer.](#)

20.

What will be output if you will compile and execute the following c code?

```
void main(){  
    double far* p,q;  
    printf("%d",sizeof(p)+sizeof q);  
}
```

- (A) 12 ☐
- (B) 8 ☐
- (C) 4 ☐
- (D) 1 ☐
- (E) Compiler error ☐

Answer

### Explanation:

It is clear p is far pointer and size of far pointer is 4 byte while q is double variable and size of double variable is 8 byte.

What is near pointer?

Complete poin

What is far pointer?

What is huge pointer?ter tutorial.

If you have any queries in above c questions answers you can ask here.



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### 30 comments:



**Anonymous** 10/13/11, 8:20 PM

in question no.13,the answer which i got afr compilation was 56....  
btw thanx alot!!...itz very useful...!!

[Reply](#)



**Anonymous** 10/27/11, 7:42 PM

Yes in Q 13 ans is 56. Compiler ignores null '\0' and prints ascii value of 8.

[Reply](#)



**Anonymous** 10/28/11, 9:17 PM

in que no. 5 i got 19 as answer after compiling with gcc compiler instead of 21. is it compiler dependent. even the compiler given at the end of page on your website is also giving the output 19

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[Replies](#)



**Anonymous** 5/10/13, 9:57 AM

Yes you are correct. These questions are compiler dependent. One should do a pre-test before posting it over internet.

[Reply](#)



**Anonymous** 10/31/11, 3:26 PM

Hey....It is not null '\0'..

It is '\08'...

o(abcd...o) != 0(Zero).

[Reply](#)



**Juan Tamad** 11/14/11, 8:38 PM

Very nice, this is very useful..

[Reply](#)



**kavish** 12/7/11, 6:07 PM

Ans for Q7 should b 12 11 12 !

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**Anonymous** 2/2/12, 9:07 PM

sry...the ans 12 11 11 only...



**Abhay Pandey** 9/2/14, 10:07 AM

the ans is 12 11 12

---

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**Anonymous** 2/2/12, 9:09 PM

plss..xplain me how ques 1. got 64 as the answer ..

[Reply](#)



**Rahul** 3/29/12, 10:35 AM

i think in question no 11 we will not enter the for loop as it is having semicolon so output should be garbage as far as i know.

[Reply](#)



**Anonymous** 4/8/12, 10:11 PM

thanku it was very use ful  
bt i hv prb in 19 ques as my ans is compiler error..

[Reply](#)



**Anonymous** 9/19/12, 11:49 AM

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**Anonymous** 12/15/12, 8:30 PM

VERY USEFUL AND GOOD EXPLANATION OF ANSWERS

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**Anonymous** 12/19/12, 3:00 PM

it is very useful and good explanation for the questions

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**Anonymous** 2/3/13, 4:03 PM

I Think Ans for Qn.19 is (E):Compiler Error na?

[Reply](#)



**Anonymous** 2/3/13, 4:06 PM

Excellent Bro...

[Reply](#)

**Anonymous** 2/15/13, 12:54 AM



really a short encyclopedia....

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**Anonymous** 2/28/13, 5:41 PM

i want to write c program to send mail  
help and advice will be appreciated  
thanks

[Reply](#)



**rathan** 5/21/13, 3:55 PM

superb very useful

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**Anonymous** 5/24/13, 4:42 PM

its very useful...! thank u..! :)

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**Atul** 6/13/13, 11:28 PM

it is very good site.....it's very helpful for me

[Reply](#)



**nishant** 6/26/13, 4:41 PM

its very gud and equally helpful

[Reply](#)



**Anonymous** 8/28/13, 3:23 PM

Answer to 5 is compiler dependent  
void main(){  
int i=4,x;  
x=++i + ++i + ++i;  
printf("%d",x);  
}

Answer comes in as 19 in several compilers.

[Reply](#)



**Anonymous** 8/28/13, 3:28 PM

Answer to 8 is Hello world11

[Reply](#)



**Anonymous** 8/28/13, 4:25 PM

on 17, you may want to mention that precedence plays a role here. for e.g  
void main(){  
int array[]={10,20,30,40};  
printf("%d",(-2)[array]);  
}

would result in garbage, if the sign affinity is given priority

[Reply](#)



**Anonymous** 10/4/13, 11:04 AM

ching chang chou

[Reply](#)



**ABHILASH SINGH** 6/12/14, 12:10 PM

in question 13 you are printing with specifier %d it will print the ascii of 8 that is 56. i found many mistakes in this blog and for gcc compiler it was huge please go through your own answer the answers given in this maximum are wrong.. carefull

[Reply](#)



**Abhay Pandey** 9/2/14, 10:09 AM

in ques no 15 dangling pointer occur but it is also printing the result as 26 why and how???

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**Mehboob Elahi** 12/27/14, 11:29 AM

ya true

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