



# Talent Transformation (2019)

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**Started on** Tuesday, 28 August 2018, 3:50 PM

**State** Finished

**Completed on** Tuesday, 28 August 2018, 3:58 PM

**Time taken** 8 mins 17 secs

**Grade** 5.00 out of 10.00 (50%)

## Question 1

Incorrect

Mark 0.00 out of 1.00

Flag question

What will happen if in a C program you assign a value to an array element whose subscript exceeds the size of array?

Select one:

- ☒ a. The compiler would report an error. ❌
- ☐ b. The program may crash if some important data gets overwritten.
- ☐ c. The array size would appropriately grow.
- ☐ d. The element will be set to 0.

## Explanation:

If the index of the array size is exceeded, the program will crash. Hence "option c" is the correct answer. But the modern compilers will take care of this kind of errors.

Example: Run the below program, it will crash in Windows (TurboC Compiler)

```
#include<stdio.h>
int main()
{
    int arr[2];
    arr[3]=10;
    printf("%d",arr[3]);
    return 0;
}
```


Since C is a compiler dependent language, it may give different outputs at different platforms. We have given the Turbo-C Compiler (Windows) output.

Please try the above programs in Windows (Turbo-C Compiler) and Linux (GCC Compiler), you will understand the difference better.

The correct answer is: The program may crash if some important data gets overwritten.

**Question 2**


Incorrect

Mark 0.00 out of  
1.00 Flag question

What will be the output of the program if the array begins at 65472 and each integer occupies 2 bytes?

```
#include<stdio.h>
int main()
{
int a[3][4] = {1, 2, 3, 4, 4, 3, 2, 1, 7, 8, 9, 0};
printf("%u, %u\n", a+1, &a+1);
return 0;
}
```

Select one:

- ☐ a. 65480, 65496
- ☐ b. 65480, 65488
- ☐ c. 65474, 65476
- ☒ d. 65474, 65488 

## Explanation:

Step 1: `int a[3][4] = {1, 2, 3, 4, 4, 3, 2, 1, 7, 8, 9, 0};` The array `a[3][4]` is declared as an integer array having the 3 rows and 4 columns dimensions.

Step 2: `printf("%u, %u\n", a+1, &a+1);`

The base address(also the address of the first element) of array is 65472.

For a two-dimensional array like a reference to array has type "pointer to array of 4 ints". Therefore, `a+1` is pointing to the memory location of first element of the second row in array Hence  $65472 + (4 \text{ ints} * 2 \text{ bytes}) = 65480$

Then, `&a` has type "pointer to array of 3 arrays of 4 ints", totally 12 ints.

Therefore, `&a+1` denotes  $12 \text{ ints} * 2 \text{ bytes} * 1 = 24 \text{ bytes}$ .


Hence, beginning address  $65472 + 24 = 65496$ . So, `&a+1 = 65496`

Hence the output of the program is 65480, 65496

The correct answer is: 65480, 65496

**Question 3**

Correct

Mark 1.00 out of  
1.00 Flag question

What will be the output of the program?

```
#include<stdio.h>
int main()
{
char c=48;
int i, mask=01;
for(i=1; i<=5; i++)
{
printf("%c", c|mask);
mask = mask<<1;
}
```

```
return 0;
}
```

Select one:

- ☐ a. 12556
- ☒ b. 12480 ✓
- ☐ c. 12400
- ☐ d. 12500

The correct answer is: 12480

#### Question 4

Correct

Mark 1.00 out of 1.00

Flag question

Assuming a integer 2-bytes, What will be the output of the program?

```
#include<stdio.h>
int main()
{
printf("%x\n", -1<<3);
return 0;
}
```

Select one:

- ☐ a. ffff
- ☐ b. -1
- ☒ c. fff8 ✓
- ☐ d. 0

## Explanation:

The system will treat negative numbers in 2's complement metho

Example:

Assume the size of int is 2-bytes(16 bits). The integer value 1 is represented as given below:

Binary of 1: 00000000 00000001 (this is for positive value of 1)

1's complement of binary 1: 11111111 11111110

2's complement of binary 1: 11111111 11111111

Thy system will store '11111111 11111111' in memory to represent '-1'.

If we do left shift (3 bits) on 11111111 11111111 it will become as given below:

11111111 11111111 --- (left shift 3 times) ---> 11111111 11111000.

So, 11111111 11111000 --- (binary to hex) ---> FF F8. (Required Answer)

Note:

How is the negative number obtained from 2's complement value?

As stated above, -1 is represented as '11111111 11111111' in memory.

So, the system will take 2's complement of '11111111 11111111' to the get the original

negative value back.

Example:

Bit Representation of -1: 11111111 11111111

Since the left most bit is 1, it is a negative number. Then the value is

1's complement: 00000000 00000000

2's complement: 00000000 00000001 (Add 1 to the above result)

Therefore, '00000000 00000001' = 1 and the sign is negative.

Hence the value is -1.

The correct answer is: fff8

### Question 5

Incorrect

Mark 0.00 out of  
1.00

🚩 Flag question

Which of the following statements are correct about the program?

```
#include<stdio.h>
int main()
{
    unsigned int num;
    int c=0;
    scanf("%u", &num);
    for(;num;num>>=1)
    {
        if(num & 1)
            c++;
    }
    printf("%d", c);
    return 0;
}
```

Select one:

- ☐ a. It counts the number of bits that are ON (1) in the number num.
- ☒ b. Error ❌
- ☐ c. It counts the number of bits that are OFF (0) in the number num.
- ☐ d. It sets all bits in the number num to 1

## Explanation:

If we give input 4, it will print 1.

Binary-4 == 00000000 00000100 ; Total number of bits = 1.

If we give input 3, it will print 2.

Binary-3 == 00000000 00000011 ; Total number of bits = 2.

If we give input 511, it will print 9.


Binary-511 == 00000001 11111111 ; Total number of bits = 9.

The correct answer is: It counts the number of bits that are ON (1) in the number num.

**Question 6**

Correct

Mark 1.00 out of 1.00

 Flag question

What will be the output of the program (sample.c) given below if it is executed from the command line?

```
cmd> sample monday tuesday wednesday thursday
/* sample.c */
#include<stdio.h>
int main(int argc, char *argv[])
{
while(--argc>0)
printf("%s", *++argv);
return 0;
}
```

Select one:


- ☐ a. tuesday
- ☒ b. monday tuesday wednesday thursday ✓
- ☐ c. monday tuesday thursday
- ☐ d. sample monday tuesday wednesday thursday

The correct answer is: monday tuesday wednesday thursday

**Question 7**

Correct

Mark 1.00 out of 1.00

 Flag question

What will be the output of the program (sample.c) given below if it is executed from the command line (turbo c under DOS)?

```
cmd> sample Good Morning
/* sample.c */
#include<stdio.h>
int main(int argc, char *argv[])
{
printf("%d %s", argc, argv[1]);
return 0;
}
```

Select one:

- ☐ a. 2 Good
- ☒ b. 3 Good ✓
- ☐ c. 3 Morning
- ☐ d. Good Morning

The correct answer is: 3 Good

**Question 8**

Incorrect

What will be the output of the program in Turbo C?

```
#include<stdio.h>
```

Mark 0.00 out of

1.00

Flag question

```
int main(int argc, char *argv, char *env[])
{
    int i;
    for(i=1; i<argc; i++)
        printf("%s\n", env[i]);
    return 0;
}
```

Select one:

- ☐ a. count of command-line arguments
- ☒ b. Error: cannot have more than two arguments in main() ❌
- ☐ c. List of all command-line arguments
- ☐ d. List of all environment variables

The correct answer is: List of all environment variables

### Question 9

Incorrect

Mark 0.00 out of

1.00

Flag question

Point out the error in the following program.

```
#include<stdio.h>
void display(int (*ff)());
int main()
{
    int show();
    int (*f)();
    f = show;
    display(f);
    return 0;
}
void display(int (*ff)())
{
    (*ff)();
}
int show()
{
    printf("IndiaBIX");
}
```


Select one:

- ☐ a. No error and prints "IndiaBIX"
- ☒ b. Error: invalid function call f=show; ❌
- ☐ c. No error and prints nothing.
- ☐ d. Error: invalid parameter in function display()

The correct answer is: No error and prints "IndiaBIX"

**Question 10**

Correct

Mark 1.00 out of  
1.00 Flag question

Does the data type of all elements in the union will be same.

Select one:

- ☒ a. False ✓
- ☐ b. True

The correct answer is: False

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