C Programming Questions and Answers – Data Types and Sizes – 2

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Here is a listing of C language programming interview questions on “Data Types and Sizes” along with answers, explanations and/or solutions:

1. Comment on the output of this C code?

```
#include <stdio.h>

int main()

{

    float f1 = 0.1;

    if (f1 == 0.1)

        printf("equal\n");

    else

        printf("not equal\n");

}
```

a) equal

b) not equal

c) Output depends on compiler

d) None of the mentioned

View Answer

Answer:b

Explanation:0.1 by default is of type double which has different representation than float resulting in inequality even after conversion.

Output:

$ cc pgm4.c

$ a.out

not equal

2. Comment on the output of this C code?

```
#include <stdio.h>

int main()

{

    float f1 = 0.1;

    if (f1 == 0.1f)
```

```
        printf("equal\n");

    else

        printf("not equal\n");

}
```

a) equal

b) not equal

c) Output depends on compiler

d) None of the mentioned

View Answer

Answer:a

Explanation:0.1f results in 0.1 to be stored in floating point representations.

Output:

$ cc pgm5.c

$ a.out

equal

3. What is the output of this C code (on a 32-bit machine)?

```
#include <stdio.h>

int main()
```

```
{

    int x = 10000;

    double y = 56;

    int *p = &x;

    double *q = &y;

    printf("p and q are %d and %d", sizeof(p), sizeof(q));

    return 0;

}
```


a) p and q are 4 and 4

b) p and q are 4 and 8

c) Compiler error

d) p and q are 2 and 8

View Answer

Answer:a

Explanation:Size of any type of pointer is 4 on a 32-bit machine.

Output:

$ cc pgm6.c

$ a.out

p and q are 4 and 4

4. Which is correct with respect to size of the datatypes?

a) char > int > float

b) int > char > float

c) char < int < double

d) double > char > int

View Answer

Answer:c

Explanation:char has lesser bytes than int and int has lesser bytes than double in any system

5. What is the output of the following C code(on a 64 bit machine)?

```
#include <stdio.h>

union Sti

{

    int nu;

    char m;

};

int main()
```

```
{

    union Sti s;

    printf("%d", sizeof(s));

    return 0;

}
```

a) 8

b) 5

c) 9

d) 4

View Answer

Answer:d

Explanation:Since the size of a union is the size of its maximum datatype, here int is the largest hence 4.

Output:

$ cc pgm7.c

$ a.out

4

6. What is the output of this C code?

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

```
int main()

{

    float x = 'a';

    printf("%f", x);

    return 0;

}
```

a) a

b) run time error

c) a.0000000

d) 97.000000

View Answer

Answer:d

Explanation:Since the ASCII value of a is 97, the same is assigned to the float variable and printed.

Output:

$ cc pgm8.c

$ a.out

97.000000

7. Which of the datatypes have size that is variable?

a) int

b) struct

c) float

d) double

View Answer

Answer:b

Explanation:Since the size of the structure depends on its fields, it has a variable size.