

C Programming

Data Types in C

DPP-01

[MCQ]

1. Consider the following declarations:
 P: signed short x;
 Q: unsigned long long int x;
 Which of the given declarations is/are CORRECT?
 (a) Only P
 (b) Only Q
 (c) Both P and Q
 (d) Neither P nor Q

[NAT]

2. Consider the following program:

```
#include <stdio.h>
int main()
{
    int x=32769;
    printf("%d", x);
    return 0;
}
```

 (Assume integer is of 2 bytes)
 The value printed is- _____.

[MCQ]

3. Consider the following program:

```
#include <stdio.h>
int main()
{
    char ch=141;
    printf("%d", ch);
    return 0;
}
```

 The output is-
 (a) Compiler Error
 (b) -115
 (c) -128
 (d) 141

[MCQ]

4. Consider the following function:

```
#include <stdio.h>
int main()
{
    char ch = -134;
    printf("%c", ch);
    return 0;
}
```

 The output is-
 (a) A (b) Garbage
 (c) Compiler Error (d) z

[NAT]

5. Consider the following program:

```
#include <stdio.h>
int main()
{
    char ch=125;
    ch=ch+6;
    printf("%d", ch);
    return 0;
}
```

 The output is- _____.

[NAT]

6. Consider the following program:

```
#include <stdio.h>
int main()
{
    int x=-32769;
    printf("%d", x);
    return 0;
}
```

 (Assume integer is of 2 bytes)
 The output is: _____.

Remember the cyclic property of unsigned integers also

[MCQ]

7. Consider the following two statements:

P: C standard specifies fixed number of bytes for every data type.

Q: The size order for int, short and long data type is $\text{short} < \text{int} < \text{long}$

Which of the following statements is/are CORRECT?

- (a) Only P
- (b) Only Q
- (c) Neither P nor Q
- (d) Both P and Q

[MSQ]

8. Which of the following is/are valid declaration of a signed short integer?

- (a) `short int a;`
- (b) `short a;`
- (c) `signed short a;`
- (d) `signed short int a;`



Answer Key

- | | |
|-------------|-----------------|
| 1. (c) | 5. (-125) |
| 2. (-32767) | 6. (32767) |
| 3. (b) | 7. (b) |
| 4. (d) | 8. (a, b, c, d) |



Hints and Solutions

1. (c)

Both P and Q are valid declarations.

2. (-32767)

32769 is 2 steps ahead of 32767. After 32767, 2 steps are counted from -32768(including -32768) as -32768, -32767

Printed value = -32767.

3. (b)

141 is 14 steps ahead of 127. After 127, 14 steps are counted from -128(including -128) as

-128, -127, -126, -125, -124, -123, -122, -121, -120, -119, -118, -117, -116, -115.

Printed value = -115.

4. (d)

Unsigned value for -134 = $256 - 134 = 122$.

Hence, 'z' is printed.

5. (-125)

$ch = 125 + 6 = 131$

131 is 4 steps ahead of 127. After 127, 4 steps are counted from -128(including -128) as

-128, -127, -126, -125

Output = -125.

6. (32767)

Printed value = $65536 - 32769 = 32767$.

7. (b)

P: INCORRECT. C standard does not specify fixed number of bytes for any data type. The number of bytes for any data type depends on compiler.

Q: CORRECT. The size order for int, short and long data type is short < int < long.

8. (a, b, c, d)

All are valid declarations.



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