C Programming

Data Types & Operators

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: _____.

[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 short<int<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)**
2. **(-32767)**
3. **(b)**
4. **(d)**
5. **(–125)**
6. **(32767)**
7. **(b)**
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 –327688(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.