C Programming

DPP

Language Processor & Data Types and Operators

Q1 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

Q2 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- _____.

Q3 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

Q4 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

Q5 Consider the following program:

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

The output is- _____.

Q6 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: _____.

Q7 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

Q8 In C programming language, after executing the following code what are the values of x, y and z?

```
int x, y = 10, z = 12;
x = y ++ + z ++;
```

(A) x = 22, y = 10, z = 12

(B) x = 24, y = 10, z = 12

(C) x = 24, y = 11, z = 13

(D) x = 22, y = 11, z = 13

Answer Key

Q1	(C)	Q5	**–125**
Q2	**-32767**	Q6	**32767**
Q3	(B)	Q7	(B)
Q4	(D)	Q8	(D)

Hints & Solutions

Q1 Text Solution:
Both P and Q are valid declarations.

Q2 Text Solution:
32769 is 2 steps ahead of 32767. After 32767, 2 steps are counted from –327688(including -32768) as
–32768, –32767
Printed value = –32767.

Q3 Text Solution:
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.

Q4 Text Solution:
Unsigned value for –134= 256 – 134 = 122.
Hence, 'z' is printed.

Q5 Text Solution:
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.

Q6 Text Solution:
Printed value = 65536–32769=32767.

Q7 Text Solution:
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.

Q8 Text Solution:
'y' and 'z' have post increment operator, so the value of 'x' will be calculated first, then 'y' and 'z' values will be incremented.
Hence x becomes 22 and y and z 11 and 13 respectively.