**Declaration**

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**1.What is the output of this C code?**

#include <stdio.h>

void foo(const int \*);

int main()

{

const int i = 10;

printf("%d ", i);

foo(&i);

printf("%d", i);

}

void foo(const int \*i)

{

\*i = 20;

}

a) Compile time error

b) 10 20

c) Undefined value

d) 10

Answer: a

Explanation: Cannot change a const type value.

Output:

$ cc pgm1.c

pgm1.c: In function ‘foo’:

pgm1.c:13: error: assignment of read-only location ‘\*i’

**2. Comment on the output of this C code?**

#include <stdio.h>

int main()

{

const int i = 10;

int \*ptr = &i;

\*ptr = 20;

printf("%d\n", i);

return 0;

}

a) Compile time error

b) Compile time warning and printf displays 20

c) Undefined behaviour

d) 10

**Answer: b**

**Explanation: Changing const variable through non-constant pointers invokes compiler warning. However, this will not generate any error.**

Output:

$ cc pgm2.c

pgm2.c: In function ‘main’:

pgm2.c:5: warning: initialization discards qualifiers from pointer target type

$ a.out

20

**3. What is the output of this C code?**

#include <stdio.h>

int main()

{

j = 10;

printf("%d\n", j++);

return 0;

}

a) 10

b) 11

c) Compile time error

d) 0

**Answer: c**

Explanation: Variable j is not defined.

Output:

$ cc pgm3.c

pgm3.c: In function ‘main’:

pgm3.c:4: error: ‘j’ undeclared (first use in this function)

pgm3.c:4: error: (Each undeclared identifier is reported only once

pgm3.c:4: error: for each function it appears in.)

**4. Does this compile without error?**

#include <stdio.h>

int main()

{

for (int k = 0; k < 10; k++);

return 0;

}

a) Yes

b) No

c) Depends on the C standard implemented by compilers

d) None of the mentioned

**Answer: c**

Explanation: Compilers implementing C90 does not allow this but compilers implementing C99 allow it.

Output:

$ cc pgm4.c

pgm4.c: In function ‘main’:

pgm4.c:4: error: ‘for’ loop initial declarations are only allowed in C99 mode

pgm4.c:4: note: use option -std=c99 or -std=gnu99 to compile your code

**5. Does this compile without error?**

#include <stdio.h>

int main()

{

int k;

{

int k;

for (k = 0; k < 10; k++);

}

}

a) Yes

b) No

c) Depends on the compiler

d) Depends on the C standard implemented by compilers

**Answer: a**

Explanation: There can be blocks inside block and within blocks variables have only block scope.

Output:

$ cc pgm5.c

**6. Which of the following declaration is not supported by C?**

a) String str;

b) char \*str;

c) float str = 3e2;

d) Both String str; & float str = 3e2;

**Answer: a**

Explanation: It is legal in Java, not in C.

**7.**

#include <stdio.h>

int main()

{

char \*var = "Advanced Training in C by Sanfoundry.com";

}

Which of the following format identifier can never be used for the variable var?

a) %f

b) %d

c) %c

d) %s

**Answer: a**

Explanation: %c can be used to print the indexed position. %d can still be used to display its ASCII value. %s is recommended.

%f cannot be used.

**8. Which of the following declaration is illegal?**

a) char \*str = “Best C programming classes by Sanfoundry”;

b) char str[] = “Best C programming classes by Sanfoundry”;

c) char str[20] = “Best C programming classes by Sanfoundry”;

d) char[] str = “Best C programming classes by Sanfoundry”;

Answer: d

Explanation: char[] str is a declaration in Java, not in C.

**9. Which keyword is used to prevent any changes in the variable within a C program?**

a) immutable

b) mutable

c) const

d) volatile

**Answer: c**

Explanation: const is a keyword constant in C program.

**10. Which of the following is not a pointer declaration?**

a) char a[10];

b) char a[] = {‘1’, ‘2’, ‘3’, ‘4’};

c) char \*str;

d) char a;

**Answer: d**

Explanation: Array declarations are pointer declarations.

1. **What is the output of this C code?**

#include <stdio.h>

void main()

{

int k = 4;

float k = 4;

printf("%d", k)

}

a) Compile time error

b) 4

c) 4.0000000

d) 4.4

**Answer: a**

Explanation: Since the variable k is defined both as integer and as float, it results in an error.

Output:

$ cc pgm8.c

pgm8.c: In function ‘main’:

pgm8.c:5: error: conflicting types for ‘k’

pgm8.c:4: note: previous definition of ‘k’ was here

pgm8.c:6: warning: format ‘%d’ expects type ‘int’, but argument 2 has type ‘double’

pgm8.c:7: error: expected ‘;’ before ‘}’ token

**12. Which is false ?**

a) A variable defined once can be defined again with different scope

b) A single variable cannot be defined with two different types in the same scope

c) A variable must be declared and defined at the same time

d) A variable refers to a location in memory

**Answer: c**

Explanation: It is not an error if the variable is declared and not defined. For example – extern declarations.

**13. A variable declared in a function can be used in main**

a) True

b) False

c) True if it is declared static

d) None of the mentioned

**Answer: b**

Explanation: Since the scope of the variable declared within a function is restricted only within that function, the above statement is false.

**14. The name of the variable used in one function cannot be used in another function**

a) True

b) False

c) May be

d) None of the mentioned

**Answer: b**

Explanation: Since the scope of the variable declared within a function is restricted only within that function, the same name can be used to declare another variable in another function.