Question 1: Which keyword is used to allocate memory for a dynamic array in C++?

a) `new`

b) `malloc`

c) `create`

d) `alloc`

Answer: a) `new`

Question 2: What is the output of the following code snippet?

```
#include <iostream>

int main() {
    int x = 5;
    int& ref = x;
    ref = 10;
    std::cout << x << std::endl;
    return 0;
}
```

a) 5

b) 10

c) Compiler error

d) Undefined behavior

Answer: b) 10

Question 3: Which of the following statements about function overloading in C++ is correct?

a) Overloaded functions must have different return types.

b) Overloaded functions must have the same number of parameters.

c) Overloaded functions must have the same name.

d) Overloaded functions must have different parameter types or a different number of parameters.

Answer: d) Overloaded functions must have different parameter types or a different number of parameters.

Question 4: What is the purpose of the `const` keyword in C++?

a) It specifies that a function does not modify the object it is called on.

b) It specifies that a variable cannot be modified after its initialization.

c) It specifies that a member function cannot be overridden in a derived class.

d) It specifies that a variable has a constant value that cannot be changed.

Answer: b) It specifies that a variable cannot be modified after its initialization.

Question 5: Which of the following is true about object-oriented programming (OOP) in C++?

a) Encapsulation, inheritance, and polymorphism are the three pillars of OOP.

b) C++ does not support inheritance.

c) OOP is an outdated programming paradigm.

d) Inheritance allows a class to inherit private members from its base class.

Answer: a) Encapsulation, inheritance, and polymorphism are the three pillars of OOP.

Question 6: Which of the following access specifiers specifies that a class member is accessible from anywhere in the program?

a) `public`

b) `private`

c) `protected`

d) `friend`

Answer: a) `public`

Question 7: What is the output of the following code snippet?

```
#include <iostream>

int main() {
    int arr[] = {1, 2, 3, 4, 5};
    int* ptr = arr;
    std::cout << *++ptr << std::endl;
    return 0;
}
```

a) 1

b) 2

c) 3

d) Compiler error

Answer: c) 3

Question 8: Which of the following is NOT a fundamental data type in C++?

a) `int`

b) `float`

c) `bool`

d) `string`

Answer: d) `string`

Question 9: Which operator is used to access a member of an object using a pointer?

a) `->`

b) `*`

c) `&`

d) `.`

Answer: a) `→`

Question 10: What is the correct way to dynamically deallocate memory in C++?

a) `free()`

b) `delete`

c) `dealloc()`

d) `dispose()`

Answer: b) `delete`

Question 11: What is the output of the following code snippet?

```
#include <iostream>

int main() {
    int x = 5;
    int* ptr = &x;
    std::cout << ptr << std::endl;
    return 0;
}
```

a) Address of x

b) Value of x

c) Compiler error

d) Undefined behavior

Answer: a) Address of x

Question 12: Which keyword is used to prevent further inheritance of a class in C++?

a) `sealed`

b) `final`

c) `static`

d) `const`

Answer: b) `final`

Question 13: What is the output of the following code snippet?

```
#include <iostream>

int main() {
    int x = 5;
    int& ref1 = x;
    int& ref2 = ref1;
    ref2 = 10;
    std::cout << x << std::endl;
    return 0;
}
```

a) 5

b) 10

c) Compiler error

d) Undefined behavior

Answer: b) 10

Question 14: Which keyword is used to define an alias for a data type in C++?

a) `typedef`

b) `alias`

c) `aliasof`

d) `using`

Answer: d) `using`

Question 15: Which of the following statements about templates in C++ is true?

a) Templates are used to create objects.

b) Templates allow for runtime polymorphism.

c) Templates are resolved at compile-time.

d) Templates can only be used with built-in data types.

Answer: c) Templates are resolved at compile-time.