“Static Data Members”.

1. Which among the following best defines static variables members?
a) Data which is allocated for each object separately
b) Data which is common to all the objects of a class
c) Data which is common to all the classes
d) Data which is common to a specific method
View Answer
Answer: b
Explanation: The static data members are made common to all the object of a class. They doesn’t change from object to object. Those are property of class rather than of any individual object.

2. Which keyword should be used to declare static variables?
a) static
b) stat
c) common
d) const
View Answer
Answer: a
Explanation: The keyword used to declare static variables is static. This is must be used while declaring the static variables. The compiler can make variables static if and only if they are mentioned with static keyword.

3. Any changes made to static data member from one member function _____
a) Is reflected to only the corresponding object
b) Is reflected to all the variables in a program
c) Is reflected to all the objects of that class
d) Is constant to that function only
View Answer
Answer: c
Explanation: The changes made from any function to static data member will be a common change for all the other objects also. If the change is made with respect to one object and change is printed from another object, the result will be same.

4. Which is the correct syntax for declaring static data member?
a) static mamberName dataType;
b) dataType static memberName;

c) memberName static dataType;
d) static dataType memberName;
View Answer
Answer: d
Explanation: The syntax must firstly be mentioned with the keyword static. Then the data type of the member followed by the member name should be given. This is general form of declaring static data members.

5. The static data member _____
a) Must be defined inside the class
b) Must be defined outside the class
c) Must be defined in main function
d) Must be defined using constructor
View Answer
Answer: b
Explanation: The static data members must be defined outside the class. Since these are common to all the objects and should be created only once, they must not be defined in the constructor.

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6. The syntax for defining the static data members is _____
a) dataType className :: memberName = value;
b) dataType className : memberName = value;
c) dataType className . memberName = value;
d) dataType className -> memberName =value;
View Answer
Answer: a
Explanation: The syntax doesn't contain the static keyword. Since it is already been declared as static inside the class. The data type and the corresponding class name must be there to allocate the variable to a class. The value is assigned using scope resolution operator for the member name.

7. If static data members have to be used inside a class, those member functions _____
a) Must not be static member functions
b) Must not be member functions
c) Must be static member functions
d) Must not be member function of corresponding class
View Answer
Answer: c
Explanation: Only the static member functions can access the static data members. The

definition of static members is made common and hence the member function should be capable of manipulating the static data members.

8. The static data member _____
a) Can be accessed directly
b) Can be accessed with any public class name
c) Can be accessed with dot operator
d) Can be accessed using class name if not using static member function
View Answer
Answer: d
Explanation: The static data members can be accessed using the class name also. If the member functions is not used or is not to be used then we can call the static data members directly by using its corresponding class name.

9. Which among the following is the correct syntax to access static data member without using member function?
a) className -> staticDataMember;
b) className :: staticDataMember;
c) className : staticDataMember;
d) className . staticDataMember;
View Answer
Answer: b
Explanation: For accessing the static data members without using the static member functions, the class name can be used. The class name followed by scope resolution, indicating that static data members is member of this class, and then the data member name.

10. Which data members among the following are static by default?
a) extern
b) integer
c) const
d) void
View Answer
Answer: c
Explanation: The const data members of any class are made static by default. This is an implicit meaning given by the compiler to the member. Since const values won't change from object to object, hence are made static instead.

11. What is the output of the following program?

```
class Test
{
        private: static int x;
```

```
        public: static void fun()
        {
                cout &lt;&lt; ++x &lt;&lt; " ";
        }
};
int Test :: x =20;
void main()
{
        Test x;
        x.fun();
        x.fun();
}
```

a) 20 22
b) 20 21
c) 21 22
d) 22 23
View Answer
Answer: c
Explanation: The static member is initialized with 20. Then the function is called which used pre-increment and printed value of x. The function is called twice. Hence we get 21 22 as output.

12. Whenever any static data member is declared in a class _____
a) Only one copy of the data is created
b) New copy for each object is created
c) New memory location is allocated with each object
d) Only one object uses the static data
View Answer
Answer: a
Explanation: The static data is same for all the objects. Instead of creating the same data each time an object is created, the compiler created only one data which is accessed by all the objects of the class. This saves memory and reduces redundancy.

13. If object of class are created, then the static data members can be accessed _____
a) Using dot operator
b) Using arrow operator
c) Using colon
d) Using dot or arrow operator
View Answer
Answer: d
Explanation: The static data members can be accessed in usual way as other members

are accessed using the objects. The dot operator is used generally. Arrow can be used with the pointers.

14. What will be the output of the following program?

```
class Test
{
        public: Test()
        {
                cout  &lt;&lt; "Test's Constructor is Called " &lt;&lt; endl;
        }
};

class Result
{
        static Test a;
        public:
        Result()
        {
                cout  &lt;&lt; "Result's Constructor is Called " &lt;&lt; endl;
        }
};

void main()
{
        Result b;
}
```

a) Test's Constructor is Called
b) Result's Constructor is Called
c) Result's Constructor Called Test's Constructor is Called
d) Test's Constructor Called Result's Constructor is Called
View Answer
Answer: b
Explanation: The output is the message printed from the constructor of class Result. There is no inheritance used hence only one constructor is called. Since static members are declared once in class declaration and are not defined. The constructor of class Test will not be called.

15. Which among the following is wrong syntax related to static data members?
a) className :: staticDataMember;
b) dataType className :: memberName =value;
c) static dataType memberName;

d) className : dataType -> memberName;
View Answer
Answer: d
Explanation: The syntax given in option d doesn't belong to any particular declaration or definition. First one is to access the static members using the class name. Second is to define the static data outside the class. Third syntax id to declare a data member as static in a class.

"Static Member Functions".

1. Which among the following is correct definition for static member functions?
a) Functions created to allocate constant values to each object
b) Functions made to maintain single copy of member functions for all objects
c) Functions created to define the static members
d) Functions made to manipulate static programs
View Answer
Answer: b
Explanation: The functions which are made common, with respect to definition and data usage, to all the objects. These functions are able to access the static data members of a class.

2. The static member functions _____
a) Have access to all the members of a class
b) Have access to only constant members of a class
c) Have access to only the static members of a class
d) Have direct access to all other class members also
View Answer
Answer: c
Explanation: The static member functions are common for all the objects. These functions can use only the static members of a class in which those are defined. This is because other members change with respect to each object created.

3. The static member functions _____
a) Can be called using class name
b) Can be called using program name
c) Can be called directly
d) Can't be called outside the function
View Answer

Answer: a
Explanation: The static members can be accessed using class name also. This is because the static members remain common to all the objects. Hence objects are not required.

4. Which is correct syntax to access the static member functions with class name?
a) className . functionName;
b) className -> functionName;
c) className : functionName;
d) className :: functionName;
View Answer
Answer: d
Explanation: The scope resolution operator must be used to access the static member functions with class name. This indicates that the function belongs to the corresponding class.

5. Which among the following is not applicable for the static member functions?
a) Variable pointers
b) void pointers
c) this pointer
d) Function pointers
View Answer
Answer: c
Explanation: Since the static members are not property of objects, they doesn't have this pointer. Every time the same member is referred from all the objects, hence use of this pointer is of no use.

6. Which among the following is true?
a) Static member functions can't be virtual
b) Static member functions can be virtual
c) Static member functions can be declared virtual if it is pure virtual class
d) Static member functions can be used as virtual in Java
View Answer
Answer: a
Explanation: The static member functions can't be virtual. This is a restriction on static member functions, since the definition should not change or should not be overridden

by any other function of derived class. The static members must remain same for all the objects.

7. The static members are _____
a) Created with each new object
b) Created twice in a program
c) Created as many times a class is used
d) Created and initialized only once
View Answer
Answer: d
Explanation: The static members are created only once. Then those members are reused whenever called or invoked. Memory is allocated only once.

8. Which among the following is true?
a) Static member functions can be overloaded
b) Static member functions can't be overloaded
c) Static member functions can be overloaded using derived classes
d) Static member functions are implicitly overloaded
View Answer
Answer: b
Explanation: The static member functions can't be overloaded because the definition must be the same for all the instances of a class. If an overloaded function have many definitions, none of them can be made static.

9. The static member functions _____
a) Can't be declared const
b) Can't be declared volatile
c) Can't be declared const or volatile
d) Can't be declared const, volatile or const volatile
View Answer
Answer: d
Explanation: The static member functions can't be made const, since any object or class itself should be capable of making changes to the function. And the function must retain all changes common to all the objects.

10. Which keyword should be used to declare the static member functions?
a) static
b) stat
c) const
d) common
View Answer

Answer: a
Explanation: The member functions which are to be made static, must be preceded with the keyword static. This indicates the compiler to make the functions common to all the objects. And a new copy is not created with each of the new object.

11. The keyword static is used _____
a) With declaration inside class and with definition outside the class
b) With declaration inside class and not with definition outside the class
c) With declaration and definition wherever done
d) With each call to the member function
View Answer
Answer: b
Explanation: The keyword is used only inside the class while declaring the static member. Outside the class, only definition with proper syntax is given. There is no need of specifying the keyword static again.

12. Which among the following can't be used to access the members in any way?
a) Scope resolution
b) Arrow operator
c) Single colon
d) Dot operator
View Answer
Answer: c
Explanation: The single colon can't be used in any way in order to access the static members of a class. Other symbols can be used according to the code and need.

13. We can use the static member functions and static data member _____
a) Even if class object is not created
b) Even if class is not defined
c) Even if class doesn't contain any static member
d) Even if class doesn't have complete definition
View Answer
Answer: a
Explanation: The static members are property of class as a whole. There is no need of specific objects to call static members. Those can be called directly or with class name.

14. The static data member _____
a) Can be mutable
b) Can't be mutable
c) Can't be integer
d) Can't be characters
View Answer

Answer: b
Explanation: The static data members can never be mutable. There copies are not made. Since those are common and created only once.

15. If static data member are made inline, _____
a) Those should be initialized outside the class
b) Those can't be initialized with the class
c) Those can be initialized within the class
d) Those can't be used by class members
View Answer
Answer: c
Explanation: Since the members are created once and are common for all the instances, those can be initialized inside the class. Those doesn't change with each object being created hence can be defined inside the class once for all.

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