**Access Control**

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**1.How many access specifiers are there in c++?**

a) 1

b) 2

c) 3

d) 4

**Answer: c**

Explanation: There are three access specifiers in c++. They are public, Private and Protected.

In java, another one is present. That is **package default.**

**2. What of the following describes protected access specifier?**

a) The variable is visible only outside inside the block

b) The variable is visible everywhere

c) The variable is visible to its block and to it’s derived class

d) None of the mentioned

**Answer: c**

**3. To which of the following access specifiers are applicable?**

a) Member data

b) Functions

c) Both Member data & Functions

d) None of the mentioned

**Answer: c**

**Explanation:** The access specifiers can be applicable to the member data and functions because they need to be accessed outside the block.

**4.What is the output of this program?**

#include <iostream>

using namespace std;

class student

{

public:

int rno , m1 , m2 ;

protected:

void get()

{

rno = 15, m1 = 10, m2 = 10;

}

};

class sports

{

public:

int sm;

void getsm()

{

sm = 10;

}

};

class statement : public student, public sports

{

int tot, avg;

public:

void display()

{

tot = (m1 + m2 + sm);

avg = tot / 3;

cout << tot;

cout << avg;

}

void setObject()

{

get();

}

};

int main()

{

statement obj;

obj.setObject();

obj.getsm();

obj.display();

}

a) 3010

b) 1010

c) 2100

d) Error

**Answer) a)**

**5.The default access specifiers of struct and union’s data member and member functions are:**a)protected

b) public

c) private

d) access specifier concept is not applied on the members of struct and unions

**Answer)d) public**

1. **If explicitly mentioned, can a structure’s members have private or protected access specifiers?**

a)Yes

b)No

c)access specifier concept is not applied on the members of struct and unions

**Answer)**

#include<cstdio>

struct Linked\_List\_Node

{

private:

int data;

struct Linked\_List\_Node \*next;

public:

Linked\_List\_Node();

void set\_node\_data(int);

void display\_Linked\_List\_Node();

};

Linked\_List\_Node::Linked\_List\_Node()

{

data=0;

next=NULL;

}

void Linked\_List\_Node::set\_node\_data(int temp\_data)

{

data=temp\_data;

next=NULL;

}

void Linked\_List\_Node::display\_Linked\_List\_Node()

{

printf("The data is %d\n",data);

}

int main()

{

struct Linked\_List\_Node \*new\_node=new Linked\_List\_Node();

new\_node->set\_node\_data(10);

new\_node->display\_Linked\_List\_Node();

return 0;

}

This is a sample code.

**7.What is the output of this program?**

#include <iostream>

using namespace std;

struct A

{

int i;

char j;

float f;

void func();

};

void A :: func() {}

struct B

{

public:

int i;

char j;

float f;

void func();

};

void B :: func() {}

int main()

{

A a; B b;

a.i = b.i = 1;

a.j = b.j = 'c';

a.f = b.f = 3.14159;

a.func();

b.func();

cout << "Allocated";

return 0;

}

a) Allocated

b) Error

c) 3.14159

d) None of the mentioned

**Answer: a**

**Explanation:** In this program, We used access specifiers for structures, As we declared all methods as public, The values can be allocated.

**8. What is the output of this program?**

#include <iostream>

using namespace std;

struct A

{

private:

int i, j, k;

public:

int f();

void g();

};

int A :: f()

{

return i + j + k;

}

void A :: g()

{

i = j = k = 0;

}

class B

{

int i, j, k;

public:

int f();

void g();

};

int B :: f()

{

return i + j + k;

}

void B :: g()

{

i = j = k = 0;

}

int main()

{

A a;

B b;

a.f();

a.g();

b.f();

b.g();

cout << "Identical results would be produced";

}

a) 50

b) Identical results would be produced

c) Error

d) Runtime error

**Answer: b**

Explanation: In this program, We apply the access specifiers to both the class and the structure.

**9.What is the output of this program?**

#include <iostream>

using namespace std;

class Cat

{

public:

int age;

int weight;

};

int main()

{

Cat f;

f.age = 56;

cout << "Gates is " ;

cout << f.age << " years old.\n";

}

a) Gates is

b) Gates is 56 years old

c) Error

d) None of the mentioned

**Answer: b**

Explanation: In this program, We passed the value from main function to class and returning it to the main and then printing it.

**10.What is the output of this program?**

#include <iostream>

using namespace std;

struct X;

struct Y

{

void f(X\*);

};

struct X

{

private:

int i;

public:

void initialize();

friend void g(X\* , int);

friend void Y :: f(X\*);

friend struct Z;

friend void h();

};

void X :: initialize()

{

i = 0;

}

void g(X\* x, int i)

{

x -> i = i;

}

void Y :: f(X \* x)

{

x -> i = 47;

cout << x->i;

}

struct Z

{

private:

int j;

public:

void initialize();

void g(X\* x);

};

void Z::initialize()

{

j = 99;

}

void Z::g(X\* x)

{

x -> i += j;

}

void h()

{

X x;

x.i = 100;

cout << x.i;

}

int main()

{

X x;

Z z;

z.g(&x);

cout << "Data accessed";

}

a) 99

b) 47

c) Data accessed

d) None of the mentioned

**Answer: c**

Explanation: In this program, We are using the access specifiers to friend function to manipulate the values.

**11.What is the default access level to a block of data?**

a) Public

b) Protected

c) Private

d) None of the mentioned

**Answer) c) private**

**12.What is the importance of mutable keyword?**

a) It allows the data member to change within a const member function

b) It will not allow the data member to change within a const member function

c) It will copy the values of the variable

d) None of the mentioned

**Answer) a)**