Predict the output of following C++ programs.

**Question 1**

#include<iostream>

#include<string.h>

using namespace std;

class String

{

char \*p;

int len;

public:

String(char \*a);

};

String::String(char \*a)

{

int length = strlen(a);

p = new char[length +1];

strcpy(p, a);

cout << "Constructor Called " << endl;

}

int main()

{

String s1("Geeks");

char \*name = "forGeeks";

s1 = name;

return 0;

}

**Question 2**

#include<iostream>

using namespace std;

class A

{

public:

virtual void fun() {cout << "A" << endl ;}

};

class B: public A

{

public:

virtual void fun() {cout << "B" << endl;}

};

class C: public B

{

public:

virtual void fun() {cout << "C" << endl;}

};

int main()

{

A \*a = new C;

A \*b = new B;

a->fun();

b->fun();

return 0;

}

**Question 3**

#include<iostream>

using namespace std;

class A {

 public:

    A(int ii = 0) : i(ii) {}

    void show() { cout << "i = " << i << endl;}

 private:

    int i;

};

class B {

 public:

    B(int xx) : x(xx) {}

    operator A() const { return A(x); }

 private:

    int x;

};

void g(A a)

{  a.show(); }

int main() {

  B b(10);

  g(b);

  g(20);

  getchar();

  return 0;

}

**Question 4**

#include<iostream>

using namespace std;

class Test {

int value;

public:

Test (int v = 0) {value = v;}

int getValue() { return value; }

};

int main() {

const Test t;

cout << t.getValue();

return 0;

}

**Question 2**

#include<iostream>

#include<stdio.h>

using namespace std;

class Base

{

public:

Base()

{

fun(); //note: fun() is virtual

}

virtual void fun()

{

cout<<"\nBase Function";

}

};

class Derived: public Base

{

public:

Derived(){}

virtual void fun()

{

cout<<"\nDerived Function";

}

};

int main()

{

Base\* pBase = new Derived();

delete pBase;

return 0;

}