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Reg No.:_____   Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
Sixth semester B.Tech degree examinations (S), September 2020

Course Code: EC312

Course Name:Object Oriented Programming

Max. Marks: 100   Duration: 3 Hours

PART A
Answer any two full questions, each carries 15 marks   Marks

1 a) Mention any 4 benefits and any 4 applications of OOP.   (8)

   b) Write the following program. Create a class named **distance** with **private**   (7)
       variables **x1, y1, x2, y2**. Write a parameterized constructor to initialize the
       member variables. Write a member function to compute the distance between the
       points **(x1, y1)** and **(x2, y2)**. Write a member function to display the values
       of **x1, y1, x2, y2** and the distance between them. Write a main function to
       test the class.

2 a) What is unary operator overloading? Explain with a sample code.   (7)

   b) What type of inheritance does the following code implement?   (8)
       Identify and correct the error in the following code, if any. Explain the program and
       the output.

```cpp
#include <iostream>
using namespace std;
class Automobile {
public:
      Automobile (){
            cout<< "This is an Automobile" <<endl;
      }
};
class TwoWheeler {
public:
      TwoWheeler() {
            cout<< "This is a 2 wheeler Vehicle" <<endl;
      }
};
class Bike: public Automobile, public TwoWheeler {
};
int main()
{
      Bikeobj;
      return 0;
}
```

3 a) Write a program in C++ to print all the numbers less than 100 in the Fibonacci   (7)
       series.

   b) Explain with proper diagrams any 4 types of inheritance in C++.   (8)

PART B
Answer any two full questions, each carries 15 marks

4 a) What is **this** pointer? Give a sample code illustrating any one application of **this** pointer. (7)

b) What are packages in Java? What are the steps to add a class to a package? (8)

5 a) What is a virtual function? Explain with a sample code. (7)

b) Write a program to create three threads A, B, C in Java using the thread class. Thread A shall print all the even natural numbers less than 100, Thread B shall print all the natural numbers divisible by 3 and less than 100, Thread C shall print all the numbers which are common in Thread A and Thread B. (8)

6 a) What is the output of the following code? Explain (8)

```
#include<iostream>
using namespace std;
class Parent
{
        public:
                virtual ~Parent() {cout<<"In Destructor A\n"; }
};
class Child: public Parent
{
        public:
                ~Child() {cout<<"In Destructor B\n"; }
};
int main()
{
        Parent *ptr = new Child();
        delete ptr;
        return 0;
}
```

b) Explain the use of 'super' keyword with an example. (7)

PART C
Answer any two full questions, each carries 20 marks

7 a) What are activities in android? Draw the android activity cycle diagram and explain the callback methods. (10)

b) Explain Uses-permission and Use-sdk in labels in AndroidManifest.xml file. (10)

8 a) What are broadcast receivers? Explain creation and registering of broadcast receiver with an example. (10)

b) Explain what is Android Virtual Device? Write any four functionalities of AVD. (10)

9 a) Explain any 5 UI controls used in android. (10)

b) What is AndroidManifest.xml file in android? What are the details included in the file? (10)

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