Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

SIXTH SEMESTER B.TECH DEGREE EXAMINATION, APRIL 2018

Course Code: EC312

Course Name: OBJECT ORIENTED PROGRAMMING (EC)

Max. Marks: 100 Duration: 3 Hours

PART A

Answer any two full questions, each carries 15 marks. Marks

1 a) Create a class in C++ having three members (an integer number, sum of digits of the number and a single digit formed by finding the sum of digits of the number until the number is a single digit). Include appropriate functions to enter the number from user end, do calculations and displaying. Also include appropriate constructors for initialising all members to zero. (8)

(eg: 1236, sum of digits =12,sum of digits as single digit =3)

Write a main program to test the class.

b) Explain inheritance and give the different types of inheritance in C++. Also explain public, private and protected access controls. (7)

2 a) Explain what a friend function is. Write a C++ program to use friend function acting as bridge between two classes (sum of internal marks and university marks stored of a student stored in two separate classes for 5 subjects). Prepare a mark list for the student. (8)

b) Explain operator overloading. Give examples each for overloading unary and binary operators. (7)

3 a) Write a C++ to print and find the sum of first 20 prime numbers. (10)

b) Explain what an abstract base class is. Give uses. (5)

PART B

Answer any two full questions, each carries 15 marks.

4 a) Explain with example program in C++ how the keyword virtual is used to implement dynamic binding. (8)

b) What are bytecodes and JVM? Explain how Java implements Machine Independent Programming. (5)

c) What is the use of import statement in a Java program? (2)

5 a) Can a pointer of base class type point to an object of the derived class? Explain. (7)

b) Write a Java program to print and find the sum of squares of n numbers. (8)

6 a) class A (7)

```
{ //class definition
…..
};
void main();
{  A*p;
..
}
```

Explain what p in this code segment is. How can it be used to access members of class A?

b) What is a thread in Java? How is multithreading implemented in a program? Give a programming example to demonstrate the syntax and show how to start and manage threads using different methods. (8)

PART C

Answer any two full questions, each carries 20 marks.

7 a) What is the advantage of Android OS? Give any 4 features and explain. (6)

b) Give the tools needed to develop android application program. (4)

c) Differentiate between broadcast receivers and content providers. How are they implemented? (10)

8 a) Give the steps to develop a simple android application program. (10)

b) Explain what is an Intent and an Intent Filter. (10)

9 a) Give the layered architecture of Android OS. (5)

b) Explain the four main components that can be used within Android application. (10)

c) What is the use of AndroidManifest.xml file in android? (5)

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Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

SIXTH SEMESTER B.TECH DEGREE EXAMINATION(R&S), MAY 2019

Course Code: EC312

Course Name:Object Oriented Programming

Max. Marks: 100 Duration: 3 Hours

Answer any two full questions, each carries 15 marks Marks

1 a) Discuss the features and advantages of Object Oriented Programming. (7)

b) Illustrate with a real life example how multi-level inheritance is implemented in C++ programs. (8)

2 a) Identify the error in the following C++ program segment. Give explanation. Give any suggestion to rectify the error. (7)

```
#include <iostream.h>

class room
{
intwidth,length;
void setvalue(int w,  l)
{
width=w; length=l}
};
void main()
{
room classroom;
classroom.setvalue(12,13);
….
}
```

b) What is an object in a C++ program? (4)

c) What is the need of an abstract base class? Give example. (4)

3 a) Explain the use of constructors and destructors in a program. Write example to show different constructors used in same class definition. (7)

b) Write a program to show how to overload '+' operator (8)

i) without friend function

ii) with friend function

PART B

Answer any two full questions, each carries 15 marks

4 a) How is polymorphism achieved in C++ at (7)

i) run time

ii) compile time ?

b) Explain different forms of inheritance in Java program. Write a program to illustrate single inheritance in Java. (8)

5 a) When do we make a virtual function pure? Give example. (7)

b) Write a Java program to display following on the screen (8)

1
2 2
3 3 3
4 4 4 4
….
(Upto *n* lines)

6 a) How can you create pointers to objects in C++? Explain how pointers can be used to access members of a class? (7)

b) Give the layers of interaction of a Java program and explain how Java achieve architecture neutrality? (8)

PART C

Answer any two full questions, each carries 20 marks

7 a) Explain the layered architecture of Android OS. (10)

b) What are broadcast receivers and content providers? How are they implemented in an android program? (10)

8 a) Explain any five features of Android OS. (10)

b) What is an activity in Android? Explain activity life cycle diagram. (10)

9 a) Give the steps to develop a simple android application program. (12)

b) What is the use of AndroidManifest.xml file in android? (8)

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Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

SIXTH SEMESTER B.TECH DEGREE EXAMINATION(S), DECEMBER 2019

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) Write a class to represent a 3D vector. Include member functions to perform the following tasks: (10)
i) to create the vector
ii) to multiply by a scalar value
iii) find the magnitude of vector
iv) to display the vector in the form (10, 20, 30,…)
Write a main function to implement this class.

b) What is the need of constructors in an object oriented program? Give any three constructors in C++. (5)

2 a) Distinguish between class and object in a program. (4)

b) With proper explanation, give the output of the following program (8)

```
#include <iostream.h>
void calc(int& x,int y)
{ int temp = x + y;
x+ = temp;
y+=temp;
}
void main( )
{ int a = 50,b=20;
calc(a,b);
cout<< "a="<<a<<"b="<<b;
}
```

c) What is a virtual base class? (3)

3 a) Explain the characteristics of a friend function. Write a programming example to demonstrate the use of a friend function as the bridge between two classes. (8)

b) Write a program to demonstrate multiple inheritance in C++ (7)

PART B

Answer any two full questions, each carries 15 marks

4 a) What is a virtual function? Why do we need virtual function in an object oriented program? (8)

b) Compare and contrast Java and C++. (7)

5 a) Give a programming example to show the use of a pure virtual function. (8)

b) What is a multi-threaded program? How Java implements multi-threaded program? (7)

6 a) Give an example where interface can be used to support multiple inheritance in Java. Develop a standalone Java program for the example. (8)

b) What is a this-pointer? Give applications. (7)

PART C

Answer any two full questions, each carries 20 marks

7 a) Explain any five features of Android. (10)

b) What are layouts? Describe the various layouts in Android. (10)

8 a) Define Android activity. Explain the callbacks defined in activity class. (10)

b) Discuss the role of AndroidManifest.xml file in an Android project. List out the details included in the AndroidManifest.xml file. (10)

9 a) Explain how content provider supply data from one application to another. Write the steps for creating your own content provider. Also, list out the methods needed to be overridden for the proper working of user defined content provider. (10)

b) Describe the need of using an emulator in android application development. Explain any three functionalities supported by emulator. (10)

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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`** 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. (7)

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.

```
#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 series. (7)

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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