

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? (8)
- Give a programming example to demonstrate the syntax and show how to start and manage threads using different methods.

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)
