Reg No.:_____   Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
B.Tech Degree S6 (S, FE) / S6 (PT) (S,FE) Examination May 2024 (2015 Scheme)

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)	Define classes and objects and explain their role in implementing data abstraction and encapsulation in C++.	(8)
	b)	Write a C++ program to calculate the factorial of a given number using recursion.	(7)
2	a)	Discuss the features and advantages of Object Oriented Programming.	(7)
	b)	Explain operator overloading. Give examples each for overloading unary and binary operators.	(8)
3	a)	Explain inheritance and give the different types of inheritance in C++. Also explain public, private and protected access controls.	(8)
	b)	Write a C++ program to find the sum of two complex numbers using '+' operator overloading, the class include real and imaginary parts of a complex number. Also explain the changes in the operator overloading if the operator function is a friend function.	(7)

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

4   a)   class A

```
{ //class definition
…..
};
void main();
{ A*p;
..
}
```
(7)

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

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

5 a) Illustrate with an example demonstrating the use of virtual functions to achieve runtime polymorphism in a C++ program. (7)

b) Explain the concept of packages and how they organize classes and interfaces into modular units for better code organization and maintenance. (8)

6 a) Explore the use of try-catch blocks and exception handling mechanisms to gracefully handle runtime errors and exceptional conditions. (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)

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

7 a) Define each building block and explain its role in the Android application lifecycle and architecture. (10)

b) Define Intents and explain how they facilitate communication between components within and between Android applications. (10)

8 a) What is android? What is an activity in android? (10)

b) Discuss the purpose of the AndroidManifest.xml file and its role in defining the essential components, permissions, and configurations of an Android application. (10)

9 a) Explain steps to develop a simple android application program. (10)

b) Explain the role of content providers in facilitating data sharing and access between applications in Android. (10)

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