Q. Code:255196

Reg. No. | | | | | | | | | | | | | |

B.E. / B.TECH. DEGREE EXAMINATIONS, MAY 2024

Second Semester

AD18203 - OBJECT ORIENTED PARADIGM AND PROGRAMMING

(Artificial Intelligence and Data Science)

(Regulation 2018/2018A)

TIME: 3 HOURS **MAX. MARKS: 100**

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO 1	Familiar with the basic concepts of object-oriented programming.	**2**
CO 2	Familiar with the basic concepts of C++ programming language.	**3**
CO 3	Familiar with the generic programming, exception and file handling in C++	**3**
CO 4	Understand object-oriented concepts and basic characteristics of Java.	**3**
CO 5	Understand the advanced programming concepts in Java.	**3**

PART- A (10 x 2 = 20 Marks)

(Answer all Questions)

		CO	RBT LEVEL
1.	List out the applications of OOP.	**1**	**2**
2.	Can destructors be overloaded? Justify.	**1**	**2**
3.	What is meant by dynamic polymorphism?	**2**	**2**
4.	With an example, write the code for basic to class type conversion	**2**	**2**
5.	What happens when an exception is not caught by catch block?	**3**	**3**
6.	Can function be defined inside a namespace? Justify.	**3**	**2**
7.	Differentiate static and non static method in Java.	**4**	**2**
8.	List out some of the built-in packages in Java.	**4**	**2**
9.	What is meant by thread? List out the states of thread.	**5**	**2**

			Marks	CO	RBT LEVEL
10.		How do you create a generic class in Java?	**5**	**2**	

PART- B (5 x 14 = 70 Marks)

			Marks	CO	RBT LEVEL
11. (a)	**(i)**	Explain in detail about the elements of object-oriented programming.	**(7)**	**1**	**2**
	(ii)	What is friend function? Give its characteristics. Write a C++ program to demonstrate friend function.	**(7)**	**1**	**2**
		(OR)			
(b)		What are constructors and destructors? Explain the types of constructors with suitable C++ code for each.	**(14)**	**1**	**2**
12. (a)		What is operator overloading? Overload the numerical operators '+' and '*' for complex numbers to do "addition" and "multiplication" respectively.	**(14)**	**2**	**3**
		(OR)			
(b)	**(i)**	Define Virtual function. Write a C++ program to calculate the area of different shapes using virtual function.	**(7)**	**2**	**3**
	(ii)	What is down casting. Demonstrate the concept of down casting with C++ code.	**(7)**	**2**	**3**
13. (a)		Write a C++ code to implement stack using class template.	**(14)**	**3**	**3**
		(OR)			
(b)		Explain the formatted and unformatted I/O operations with syntax.	**(14)**	**3**	**3**
14. (a)		Write a Java program to perform simple matrix addition operation.	**(14)**	**4**	**3**
		(OR)			
(b)		Explain the variuos types of inheritance supported by Java and demonstrate the execution order of constructors in these types.	**(14)**	**4**	**3**
15. (a)		Define a try block that is likely to generate three different exceptions and then incorporate necessary catch blocks and handle them appropriately using java program.	**(14)**	**5**	**3**
		(OR)			

(b)	List out the two ways of implementing threads in Java with suitable example.	**(14)**	**5**	**3**

PART- C (1 x 10 = 10 Marks)

(Q.No.16 is compulsory)

		Marks	CO	RBT LEVEL
16.	Write a C++ program to create a class Student. The Student class has data members such as roll number, name, branch. Create a class called Exam that has data members' roll number and six subject's marks. Derive the Result class from Student and Exam which has own data members such as total mark and result.	**(10)**	**2**	**5**

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