PRN No. RBT23ET006	Total No. of Questions: 09	QP Code:

ESEFY2024(M) 23-24

JSPM's

Rajarshi Shahu College of Engineering, Tathawade, Pune- 411033

(An autonomous institute affiliated to Savitribai Phule Pune University)

Examination: End Semester Examinations (ESE)

Semester: II **Academic Year: 2023-24**

Class: F. Y. B. Tech. (CS / IT/ CSBS)

Department: Engineering Sciences and Humanities

Subject Code: CS1205 **Subject Name and pattern: Object Oriented Programming (2023)**

Duration: 2 Hour **Max. Marks: 35 Marks**

Instructions to the Candidates
1. In Section A, Q.1, Q. 2 and Q.3 is compulsory.
2. In section B, Solve Q.4 or Q.5 , Q.6 or Q.7 and Q.8 or Q.9.
3. Assume suitable and necessary data wherever required.

Q. No.		Section-A	Marks	BL	CO
1		**Solve any One**			
	a	What is the difference between C and C++ ?	2	BL2	CO1
	b	Explain Data Abstraction and Encapsulation with suitable example.	2	BL2	CO1
2		**Solve any One**			
	a	Demonstrate a Scope Resolution Operator to write the function outside the class with a suitable example.	3	BL2	CO2
	b	State the concept of macros in C++	3	BL2	CO2
3		**Solve any one**			
	a	Explain Multilevel Inheritance with suitable code.	3	BL2	CO3
	b	What is multipath (hybrid) inheritance? Specify the problem of multipath inheritance	3	BL2	CO3
		Section –B			
4	a	Design a multimedia player system using polymorphism. Define a base class 'MediaPlayer' with virtual functions to play and stop. Derive classes 'AudioPlayer' and 'VideoPlayer' to implement the above virtual functions for specific media types.	5	BL3	CO4
	b	Write a note on Mutable keyword with example.	4	BL2	CO4
		OR			
5	a	Create a base class called 'Animal' with a virtual function 'makeSound()'. Derive classes 'Dog', 'Cat', and 'Cow' from 'Animal', each overriding the 'makeSound()' function to produce appropriate sounds. Write a program to demonstrate polymorphism calling 'makeSound()' for each element.	5	BL3	CO4

	b	What is runtime polymorphism? Demonstrate function overriding	4	BL2	CO4
6	a	Write a menu driven C++ program to create a MEMBER FUNCTION template to add two numbers	5	BL2	CO5
	b	How is exception handling implemented in C++? Describe the syntax for try, catch, and throw blocks	4	BL2	CO5
		OR			
7	a	Implement a function to calculate the factorial of a number. Use exception handling to handle negative input values and display an error message.	5	BL3	CO5
	b	Explain generic function templates with example	4	BL2	CO5
8	a	Write a C++ program to that reads students information (sid, sname, and sage() from a file and stores it in a file. Print the lowest age student record.	5	BL3	CO6
	b	Write a short note on stream classes in C++	4	BL3	CO6
		OR			
9	a	Write a C++ program to that accepts Employee information (emp-id, name, and salary) from a user stores it in a file. Print the highest salary employee record.	5	BL3	CO6
	b	Explain Data hierarchy in detail	4	BL3	CO6

**********BEST of LUCK**********