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MID TERM EXAMINATIONS – March 2025

Programme	: B.Tech.	Semester	: Winter Semester 2024-25
Course Title	: Object Oriented Programming with C++	Course Code	: CSE2001
Date/Session	: 10 Mar 2025/Session II	Slot	: C14+E11+E12
Time	: 1 ½ hours	Max. Marks	: 50

Answer all the Questions

Q.No.	Sub. Sec.	Question Description	Marks
1		Explain the Compilation Process with the help of a diagram that converts a high-level language program (stored in source files) into processor instructions.	10
2		A company offers commission to its salesmen based on their total sales as follows:	10

a) If the total sales are less than 100, no commission is provided.
b) If the total sales are between 100 and 500, the commission is 10% of the total sales.
c) If the total sales exceed 500, the commission is calculated as 100 + 8% of the sales amount exceeding 500.

Write a C++ program that computes the commission based on the given criteria and displays the salesman's details.

| 3 | | Define a class *Student* with the following specifications: | 10 |

a) Private data members: *name* (string), *age* (int)
b) A default constructor that initializes *name* as "*Unknown*" and *age* as *0*.
c) A function *display()* to print the values of *name* and *age*.

Create an object of *Student* class and display the default values using C++.

| 4 | | Write a C++ program to: | 10 |

a) Create a class called *Rectangle* that has member variables for *length* and *width*.
b) Implement member functions to calculate the rectangle's area and perimeter.

| 5 | | Write a program that defines an overloaded function *area( )* to calculate the area of a: | 10 |

i.   circle (given the radius)
ii. rectangle (given length and breadth)
iii. a triangle (given base and height)

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MID TERM EXAMINATIONS – March 2025

Programme	: B.Tech.	Semester	: Winter Semester 2024-25
Course Title	: OOPS with C++	Course Code	: CSE2001
Date/Session	: 03 March/ Session I	Slot	: A11+A12+A13
Time	: 1 ½ hours	Max. Marks	: 50

Answer all the Questions

Q. No.	Question Description	Marks
1	Differentiate between Procedure oriented Programming and Object oriented programming. Discuss various OOPs Concepts.	10
2	State reference variable with example? Write a program by creating class to implement Pass by value, pass by reference concept.	10
3	State constructor with its properties. Explain copy constructor with syntax and example.	10
4	Explain the concept of Friend class and Container class with example.	10
5	Briefly explain Polymorphism with its type. Write a program to implement its type in one single program.	10

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	POP	OOP
Feature	Top → bottom Focusing on functⁿ to operate programme on dat	bottom to up focusing on Objects to opperate on data that encapsolate data and behaviour.
Data handling	Data is most globaly or passed explicitly explicitly to funcⁿ	Data is encapsulated withing objects using access specifier (Privat
Code reuseability	limited code reuses: functⁿ must be re-written or copied for reuse.	

Programme	:	B.Tech.	Semester	:	Winter Sem 2024-25
Course Title/ Course Code	:	Object Oriented Programming with C++/ CSE2001	Slot	:	B23+D21+D22
Date / Session		07 March 2025 / Session I			
Time	:	1 ½ hours	Max. Marks	:	50

Answer all the Questions

Q.No.	Question Description	Marks
1	Compare and contrast procedural programming and object-oriented programming with examples. Explain the use of the inline function with the help of a suitable example.	10
2	Explain encapsulation and polymorphism with real-world examples? Write a C++ program to swap two numbers using a pointer.	10
3	Explain the significance of constructors and destructors in memory management. Discuss the importance of copy constructors with an example.	10
4	Describe dynamic objects and how they are created and managed in C++? Explain the role of friend functions and friend classes in OOP.	10
5	Define inheritance and describe different types of inheritance (single, multiple, multilevel, hierarchical, hybrid) with examples.	10

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