

Roll Number: \_\_\_\_\_

**Thapar Institute of Engineering and Technology (TIET), Patiala**  
**Department of Computer Science & Engineering (CSED)**

**AUXILIARY EXAM**

B. E. I year	Course Code: UTA018
March 1, 2024	Course Name: Object Oriented Programming
Time: 03:00 Hrs, Max. Marks: 100	Friday, 5:30 pm – 8:30 pm
	Name of Faculty: Dr. Raman Kumar Goyal

***Assume suitable values for missing data.***

Q.1	Explain the following concepts of object oriented programming in detail (4*5=20 marks) a) Abstraction b) Encapsulation c) Inheritance d) Polymorphism e) Inline functions
Q.2	a) What is friend function? Write a program in C++ to swap the values data variables of two different classes. (10 marks) b) Write a program in C++ to calculate the number of objects created in a program. (10 marks)
Q.3	(a) What are constructors? Explain different types of constructors with examples in detail. (10 marks) (b) What are the advantages of Inheritance? Explain types of inheritances with examples and syntaxes in detail. (10 marks)
Q.4	a) How overloading of pre-increment operator and post-increment operator can be done in C++. Explain by writing programs for each operator by taking any example (10 marks) b) Differentiate between compile time polymorphism and run time polymorphism. (5 marks) c) Differentiate between class templates and function templates. (5 marks)
Q.5	a) List and explain (in one sentence each) the three components of standard template library (STL). (3 marks) b) How to handle "divide by zero" exception with try catch and throw statements. Explain with the help of a program. (6 marks) c) Explain in brief the purpose of each of the following modes: (4 marks) I. ios::out II. ios::in III. ios::app IV. ios::ate d) WAP in C++ to count the number of words in a given file. (7 marks)

**Answer sheets will be shown on March 4, 2024 at 2:30 PM (L-506) .**

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