

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE- SEMESTER-IV (NEW) EXAMINATION – WINTER 2020**

Subject Code: 2140705

Date: 19/02/2021

Subject Name: Object Oriented Programming With C++

Time: 02:30 PM TO 04:30 PM

Total Marks: 56

**Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		<b>Marks</b>
<b>Q.1</b>	(a) Define OOP. Enlist the advantages of OOP paradigm.	<b>03</b>
	(b) Enlist and explain the basic characteristics of OOP.	<b>04</b>
	(c) Define constructor. Write a program to explain use of <i>copy constructor</i> .	<b>07</b>
<b>Q.2</b>	(a) Define inline function. Enlist the rules to define it.	<b>03</b>
	(b) Explain the terms with example. 1) Destructor 2) this pointer	<b>04</b>
	(c) Write a program to create a class <i>height</i> containing <i>feet</i> and <i>inches</i> . Using <i>operator</i> keyword, convert an object of class <i>height</i> into <i>total_centimeter</i> which is float data type. (1 feet = 30.48 centimeters and 1 inch=2.54 centimeters)	<b>07</b>
<b>Q.3</b>	(a) Define friend function. Enlist its characteristics.	<b>03</b>
	(b) Define stream. Explain any four stream classes for console I/O operations in C++.	<b>04</b>
	(c) Define inheritance. Explain diagrammatically various forms of inheritance. Explain <i>multi-level</i> with suitable example.	<b>07</b>
<b>Q.4</b>	(a) Define virtual function. Enlist its characteristics.	<b>03</b>
	(b) Explain the following flags: 1) ios::app 2) ios::ate 3) ios::binary 4) ios::trunc	<b>04</b>
	(c) Write a program that reads a text file and creates another file that is identical except that every lower case character is converted to upper case and vice versa.	<b>07</b>
<b>Q.5</b>	(a) Differentiate early binding and late binding.	<b>03</b>
	(b) Define reference variable. Explain with suitable example.	<b>04</b>
	(c) Define an exception. Explain with suitable example to handle the exception in C++.	<b>07</b>
<b>Q.6</b>	(a) Differentiate call by value and call by reference.	<b>03</b>
	(b) Define STL? Differentiate it with C++ standard library.	<b>04</b>
	(c) Explain the mechanism of keywords try, throw and catch to handle Exceptions in C++. Explain with an example like “ <i>division by zero</i> ” exception.	<b>07</b>
<b>Q.7</b>	(a) Define the following terms: 1) Abstract Class 2) Virtual base Class	<b>03</b>
	(b) Explain the basic difference between <i>manipulators</i> and <i>ios member functions</i> in implementation with suitable example.	<b>04</b>
	(c) Create a generic class <i>stack</i> using <i>template</i> and implement common <i>Push</i> and <i>Pop</i> operations for different data types.	<b>07</b>

- Q.8** (a) Define the following terms: **03**  
1) Template 2) Access Specifier
- (b) Discuss nameless temporary object. **04**
- (c) Write a class template to represent a generic vector. Include member functions to create the vector and to double the value of all elements of the vector. **07**

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