Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–IV (NEW) EXAMINATION – WINTER 2018

Subject Code:2140705   **Date:12/12/2018**
Subject Name:Object Oriented Programming With C++
Time: 02:30 PM TO 05:00 PM   **Total Marks: 70**
Instructions:
   1. **Attempt all questions.**
   2. **Make suitable assumptions wherever necessary.**
   3. **Figures to the right indicate full marks.**

			MARKS
Q.1	**(a)**	Differentiate Object Oriented Programming (OOP) and Procedure Oriented Programming (POP).	**03**
	(b)	Write a C++ program to find out the sum and average of three numbers using nesting of member function.	**04**
	(c)	Describe the basic structure of a C++ program with all necessary blocks.	**07**
Q.2	**(a)**	When can you make function inline? What are the advantages of making function inline?	**03**
	(b)	Following is a main() program.	**04**

```
void main()
{
time T1;
int duration = 85;
T1 = duration;
}
```

Where time is a class which contains variables hrs and minutes. duration stores total time in minutes. Define a class time with necessary functions to break up the duration in maximum hours and remaining minutes and store them into hrs and minutes respectively.

			MARKS
	(c)	Write a C++ program that overloads + operator to add two complex numbers.	**07**

OR

			MARKS
	(c)	Write a C++ program to find volume of cube, cylinder and rectangular box using concepts of function overloading. (volume of cube = s3, volume of cylinder is π*r2*h, volume of rectangular box is l*b*h)	**07**
Q.3	**(a)**	An unsigned int can be twice as large as the signed int. Explain how?	**03**
	(b)	Write a C++ program to swap the values of pair of integers using function and call by reference.	**04**
	(c)	Explain various forms of inheritance with suitable diagrams and example of each.	**07**

OR

			MARKS
Q.3	**(a)**	Differentiate structure and class in C++.	**03**

(b) Consider following class declarations. **04**
class ABC;
class XYZ{
int x;
public:
void get_x(int i) {x=i;}
friend void sum(XYZ,ABC);
};
class ABC{
int y;
public:
void get_y(int i) {y=i;}
friend void sum(XYZ,ABC);
};
By considering above class declarations, define a function sum() at outside the class to find out the sum of x and y and display the result. Also define the main() which satisfy above class declarations.

(c) List out the characteristics of constructor in C++. Write a program to illustrate the use of copy constructor. **07**

Q.4	**(a)**	Differentiate between late binding and early binding.	**03**
	(b)	Desribe different ways to open file with suitable example.	**04**
	(c)	Define polymorphism? How is it achieved in C++? Explain with suitable example.	**07**

<div align="center">OR</div>

Q.4	**(a)**	Describe the syntax and use of set () function with suitable example.	**03**
	(b)	Explain virtual base class with a program.	**04**
	(c)	Demonstrate the use of static variables and static functions with a program.	**07**
Q.5	**(a)**	Describe the significance of *this* pointer with suitable example.	**03**
	(b)	Explain following file modes. a. ios::app b. ios::out c. ios::binary d. ios::nocreate	**04**
	(c)	Define Exception? Explain Exception Handling Mechanism. Write a program that demonstrates use of multiple catch.	**07**

<div align="center">OR</div>

Q.5	**(a)**	Explain pure virtual function with suitable example.	**03**
	(b)	Describe the various approaches by which we can detect the end of file condition.	**04**
	(c)	Write a C++ program to copy the contents of a file *A.txt* into another file *B.txt*.	**07**

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