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B.Tech PAU5H003

5<sup>th</sup> Semester Regular Examination 2019-20 C++ & OBJECT ORIENTED PROGRAMMING

BRANCH: AUTO Max Marks: 100 Time: 3 Hours Q.CODE: HR278

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

### Part- I

## Q1 Only Short Answer Type Questions (Answer All-10)

(2 x 10)

- a) Define the term "Fstream" in C++. Write one of its use?
- b) What is a generic pointer? Explain with an example?
- c) What is a reference variable? What is its major use?
- **d)** What are the advantages of using a friend function?
- e) What is dynamic initialization of a variable?
- **f)** What are the advantages of new operator over malloc()?
- g) State two importance of scope resolution operator.?
- h) Write short notes on data encapsulation?
- i) What is data abstraction?
- i) What are the benefits of OOP?

## Part- II

# Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- a) Write a program to find area of a triangle, rectangle and circle using function overloading?
- b) Write down the difference between reference and dereference operators?
- c) What is difference between compiler and preprocessor?
- d) Write a program to overload the binary operator "+"?
- e) Write a note on unformatted I/O operations?
- f) Write short notes on string characteristics?
- g) Discuss different types of constructors used in OOPs with example.?
- h) Explain dynamic memory allocation mechanism in C++?
- i) Write a program to concatenate two strings?
- j) What are the properties of a friend function?
- **k)** Write a program to find hexadecimal and octal equivalent of a number?
- I) Write any program that implements friend function between two classes?

#### Part-III

## Only Long Answer Type Questions (Answer Any Two out of Four) Q3 Compare and Contrast between overloading and overriding. Create a class called (16)Volume which contains a method called "find\_vol()". Design a C++ program to create objects named as sphere and cylinder of the above class and implement function overloading to calculate volume of a sphere and cylinder based upon user input. Q4 Write a program that overloads Cin and Cout operators? (16)Q5 What is Runtime Polymorphism? Write a program that implements pure virtual (16) function? Q6 Discuss all types of constructors with an example? (16)