Reg. No. \_\_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **17CA2007** | **Duration :** | **3hrs** |
| **Sub. Name :** | **OBJECT ORIENTED PRINCIPLES USING C++** | **Max. Marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Explain the need for Object Oriented Programming. | CO1 | 10 |
| b. | Demonstrate a simple class in C++ and explain its syntax. | CO2 | 10 |
| **(OR)** | | | | |
| 2. | a. | Create a structure using C++ and distinguish how a structure differs from a class. | CO1 | 10 |
| b. | Explain with example how access specifiers can be used in a class. | CO2 | 10 |
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| 3. | a. | Create functions in C++ to bring out the differences between pass by value and pass by reference. | CO2 | 12 |
|  | b. | Write a program in C++ to print the fibonacci numbers using functions. | CO2 | 8 |
| **(OR)** | | | | |
| 4. | a. | Explain recursion with an example. | CO4 | 10 |
|  | b. | Explain enumerated data types with an example. | CO4 | 10 |
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| 5. | a. | Explain with example how a constructor and destructor is created for a class in C++. | CO3 | 12 |
|  | b. | Write a program in C++ to find the average of a student’s marks using a single dimensional array. | CO3 | 8 |
| **(OR)** | | | | |
| 6. | a. | Create a class product with data members product name, product number and cost. Include member functions for reading and printing the data. Create an array of n products and read and display their details. | CO3 | 12 |
|  | b. | Illustrate with example, how data members and methods of objects are stored in memory. | CO4 | 8 |
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| 7. | a. | Explain with an example how operator overloading (unary operator) is accomplished in C++. | CO5 | 12 |
|  | b. | Discuss the advantages of inheritance with an example. | CO6 | 8 |
| **(OR)** | | | | |
| 8. | a. | Demonstrate data conversion with a suitable program. | CO6 | 10 |
|  | b. | Explain Containership with a programming example. | CO6 | 10 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Explain how polymorphism is implemented in C++ with a sample program. | CO5 | 10 |
|  | b. | Illustrate with example any five file handling functions in C++. | CO5 | 10 |