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



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

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| **Code :** | **16CA2007** | **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 features of object oriented languages in detail. | CO1 | 10 |
| b. | Define a class book with attributes bookId, title, author, number of pages and price and define member functions to read and display the details of a book. Create an object and read and display the details of a book. | CO1 | 10 |
| **(OR)** | | | | |
| 2. | a. | Explain the iteration statements in C++ with one example for each. | CO1 | 10 |
| b. | Describe the problems with structured programming. | CO1 | 10 |
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| 3. | a. | Define a structure to represent a student with members regno, name and marks. Create a variable and read and print the details of the student. | CO4 | 10 |
| b. | Describe the storage classes in C. | CO4 | 10 |
| **(OR)** | | | | |
| 4. | a. | Define a function that calculates the value of xy. | CO4 | 10 |
| b. | Contrast call by value with call by reference with a programming example. | CO4 | 10 |
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| 5. | a. | Explain the types of constructors with examples. | CO6 | 10 |
| b. | A man goes for a walk. He covers a distance of x1 feet and y1 inches while going and covers a distance of x2 feet and y2 inches while returning back. Create a class to represent the distance in feet and inches and use it to calculate and print the total distance covered during the walk. | CO2 | 10 |
| **(OR)** | | | | |
| 6. | a. | Define a class to represent a date with integer attributes day, month and year. Define functions for reading and printing date. Define a member function for calculating the age of a person by passing objects as arguments and returning objects. Use the class to create objects and calculate the age of a function. | CO4 | 10 |
| b. | Explain the functionality of any five string functions. | CO4 | 10 |
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| 7. | a. | Explain operator overloading with a programming example. | CO3 | 10 |
| b. | Explain the different types of inheritance supported by C++ with suitable examples. | CO3 | 10 |
| **(OR)** | | | | |
| 8. | a. | Explain multiple inheritance with a programming example. | CO5 | 10 |
| b. | Explain passing arrays to functions. | CO5 | 10 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Apply friend functions to bridge two classes and demonstrate it using a program. | CO5 | 10 |
| b. | Explain virtual functions with an example. | CO5 | 10 |