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

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**End Semester Examination – Nov/Dec – 2018**

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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 need for object oriented programming. | CO1 | 10 |
| b. | What are the characteristics of object oriented programming? | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Explain data encapsulation and data abstraction with an example. | CO1 | 10 |
| b. | What is inheritance? Explain with an example. | CO1 | 10 |
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| 3. | a. | How do you create user defined data types using structures? Explain with an example. | CO4 | 10 |
| b. | Write a program to find the factorial of a number using functions. | CO4 | 10 |
| (OR) | | | | |
| 4. | a. | Describe the storage classes in C. | CO4 | 10 |
| b. | Differentiate call by value and call by reference with an example. | CO4 | 10 |
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| 5. | a. | Define a class *product*with data members*product Id, product name, cost.* Create a constructor for the class. Create objects and call the member functions to read and print the details of a product. | CO6 | 12 |
| b. | Explain passing objects as function arguments with an example. | CO2 | 8 |
| (OR) | | | | |
| 6. | a. | Describe the characteristics of arrays. | CO4 | 10 |
| b. | Write a program to find the sum and average of the heights of n students using an array. | CO4 | 10 |
|  |  |  |  |  |
| 7. | a. | Explain binary operator overloading with a programming example. | CO3 | 10 |
| b. | Describe single inheritance with a programming example. | CO3 | 10 |
| (OR) | | | | |
| 8. | a. | Explain overriding member functions with a programming example. | CO5 | 10 |
| b. | Explain aggregation with a programming example. | CO5 | 10 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | Demonstrate how pointers are used to handle arrays with a programming example. | CO5 | 10 |
| b. | Explain the stream classes used for handling files in C++. | CO5 | 10 |