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

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

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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. | Discuss the drawbacks of procedural programming and structural programming. | CO1 | 10 |
| b. | What is a class? Create a class that would represent *distance* in feet and inches and include functions to read and print a distance. Create an object to read and print a distance. | CO2 | 10 |
| (OR) | | | | |
| 2. | a. | Demonstrate how classes impose data encapsulation and data abstraction with an example. | CO2 | 10 |
| b. | What is inheritance? Explain with an example. | CO3 | 10 |
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| 3. | a. | Define a structure *student* with data members for representing regno, name, marks and course. Create a structure variable and initialize with values 34525, John, 476, MBA. | CO4 | 10 |
| b. | Explain enumerated data types with an example. | CO4 | 10 |
| (OR) | | | | |
| 4. | a. | Write a program to swap two values using reference arguments. | CO4 | 10 |
| b. | Explain the characteristics of local, global and static variables and demonstrate their usage with a sample program. | CO4 | 10 |
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| 5. | a. | Define a class *distance* to represent a distance in feet and inches. Overload constructors to initialized the data members. Create objects using each constructor. Include a destructor also for the class. | CO2 | 12 |
| b. | Demonstrate the process of cloning objects using default copy constructor with a suitable example. | CO2 | 8 |
| (OR) | | | | |
| 6. | a. | Write a program to find the sum and average of the elements of an integer array of n elements. | CO4 | 10 |
| b. | Create a class student with data membersregno, name and marks. Include member functions for reading and printing the data. Create an array of n students and read and display their details. | CO5 | 10 |
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| 7. | a. | Create a class *complex* with data members to represent a complex number. Include member functions to read and print a complex number. Overload + and – operator to add and subtract complex numbers respectively. Create objects and do the operations using overloading. | CO5 | 10 |
| b. | Describe single inheritance with a programming example. | CO5 | 10 |
| (OR) | | | | |
| 8. | a. | Demonstrate data conversion with a suitable program. | CO6 | 10 |
| b. | Explain aggregation with a programming example. | CO6 | 10 |
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|  | | **Compulsory**: |  |  |
| 9. | a. | Describe the role of new and delete operators in dynamic memory management. | CO3 | 10 |
| b. | Write a program to write an object into a file and read and print the details. | CO6 | 10 |