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



**End Semester Examination – Nov/Dec– 2017**

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| **Code :** | **14CS2035** | **Duration :** | **3hrs** |
| **Sub. Name :** | **OBJECT ORIENTED PROGRAMMING**  **IN 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. | Elaborate the fundamental characteristics of Object Oriented Programming with real time examples. | CO1 | 10 |
| b. | Write a program to reverse a number using recursive function. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Develop a program to find the grade of the student with proper comments for the given marks. | CO1 | 10 |
| b. | Create a structure called Supermarket that contains two members: Item and Total\_worth. Item is an another structure that contains item\_name, Qty and unit\_cost. Prompt the user to fill in this data for 10 Items, calculate the Total\_worth and display the information in the following tabular format.   |  |  |  |  | | --- | --- | --- | --- | | Item\_name | Qty | Unit\_cost | Total\_worth | | Eraser | 20 | 3 | 60 | | Pencil | 25 | 5 | 185 | | CO1 | 10 |
|  |  |  |  |  |
| 3. | a. | Write a C++ program for Employee using classes and Objects. The program should be able to maintain an employee with his salary and designation. The member functions are add\_employee, remove\_employee and search\_employee. Also keep track the total\_expenditure on salary distribution and number of employee in the company and print on demand. Make it as a menu driven program. | CO3 | 12 |
|  | b. | Illustrate Passing objects to functions and returning object from functions through an appropriate example. | CO1 | 8 |
| (OR) | | | | |
| 4. | a. | Explain the various control statements in C++ with sample code. |  | 12 |
|  | b. | What is the use of Constructor? Give the general syntax of constructor and explain default and copy constructor with a suitable example |  | 8 |
|  |  |  |  |  |
| 5. | a. | Create a student time table using 2 dimensional arrays. where the following operation need to be done,  i. Subject on a particular hour and day. ii. Free hours of a day iii. Subject schedule on all days. | CO1 | 12 |
|  | b. | Discuss the function overloading and overriding with suitable  example. | CO1 | 8 |
| (OR) | | | | |
| 6. | a. | Write a program to overload + operator to deposit, - operator to withdraw and ~ operator to display from an account. | CO2 | 15 |
|  | b. | Demonstrate default argument mechanism with an example. | CO1 | 5 |
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| 7. | a. | Class polygon contains data members width and height and public method set\_value() to assign values to width and height and a virtual function. Class Rectangle and Triangle are inherited from polygon class. Both classes contain public method calculate\_area() to calculate the area of Rectangle and Triangle. Use base class pointer to access the derived class object and show the area calculated. | CO4 | 15 |
|  | b. | Write short notes on  i.Virtual Function ii. Friend Function | CO4 | 3+2 |
| (OR) | | | | |
| 8. | a. | Develop a C++ program with a class called MATRIX using a two dimensional array of integers. Checks the compatibility of two matrices to be added, subtracted and perform the operations for two matrices. Get the input from the user through getdata() function and display the results in the putdata() function. Make all the operations as friend functions. | CO3 | 10 |
|  | b. | Why do we need Exception handling? Demonstrate user defined exception handling with proper program. | CO3 | 10 |
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|  | | **Compulsory:** |  |  |
| 9. | a. | Write a program in c++ to copy a file from one location to another. | CO5 | 10 |
|  | b. | Discuss about the class template with an example program. | CO5 | 10 |

ALL THE BEST