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

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

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| **Code :** | **16CS2002** | **Duration :** | **3hrs** |
| **Sub. Name :** | **FUNDAMENTALS OF JAVA PROGRAMMING** | **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. | Write a java program to get two numbers from user and perform anyone of the following operation using switch case.  i) Addition ii) Subtraction iii) Multiplication iv) Division | CO2 | 10 |
| b. | Explain in detail about the operators in java with an example program. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Discuss various features of Java. | CO1 | 10 |
| b. | Explain the different types of iteration statements with necessary example. | CO1 | 10 |
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| 3. | a. | Demonstrate constructor overloading with an example program. | CO2 | 10 |
| b. | Elaborate the principle of garbage collection in java. | CO2 | 10 |
| (OR) | | | | |
| 4. | a. | Create a class named Sum. Use default constructor to initialize two integer and two float variables. Create two methods add(int a, int b) and add(float a, float b) to add integer and float variables respectively. | CO2 | 10 |
| b. | Demonstrate the usage of access control specifiers with suitable java program. | CO3 | 10 |
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| 5. |  | Create a java application to maintain the employee details to demonstrate the concept of Inheritance.  i) Create a class called Employee. It should have following data members name, empid, department, designation, experience, basicPay, DA, gradePay, personalPay iTax. It should have constructor methods to set values of all data members and void display ( ) - to display all received data.  ii) Create a class called Permanent\_Employee. It should inherit Employee class. It should have following data member: net\_salary. It should have void display ( ) - to calculate and display net salary and other employee details. [net\_salary can calculated as follows: net\_salary=basicPay+DA+gradePay+iTax].  iii) Create a class called Contract\_Employee. It should inherit Employee class. It should have following data members: net\_salary. It should have void display ( ) - to calculate and display net salary and other employee details. [net\_salary can calculated as follows: net\_salary=basicPay+DA+gradePay+personalPay-iTax] | CO2 | 20 |
| (OR) | | | | |
| 6. | a. | Define an interface called “Shape” that contains a method called area().Write a java program to calculate the area of two shapes, Square and Rectangle by implementing the “Shape” interface. | CO2 | 10 |
|  | b. | Demonstrate the application of abstract class with a suitable program. | CO2 | 10 |
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| 7. |  | Explain the concepts of exception handling techniques using java program. | CO3 | 20 |
| (OR) | | | | |
| 8. | a. | Demonstrate the application of multithreading with a program. | CO2 | 10 |
| b. | What is Synchronization? How do you achieve synchronization in multithreading. | CO2 | 10 |
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|  | | **Compulsory**: |  |  |
| 9. | a. | What is swing? List the application of swing. Illustrate application of swing with necessary java code. | CO2 | 10 |
| b. | Write a program demonstrating the use of the various functions available in the String class. | CO2 | 10 |