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



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

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| **Code :** | **17BI2011** | **Duration :** | **3hrs** |
| **Sub. Name :** | **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. | List down the features of JAVA with appropriate definitions. | CO1 | 10 |
| b. | Write a program in Java to print the prime numbers within a given range. | CO2 | 10 |
| **(OR)** | | | | |
| 2. | a. | Elaborate the fundamental characteristics of Object Oriented Programming with real time examples. | CO1 | 10 |
| b. | Write a java program to count the even numbers in a given array. | CO2 | 10 |
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| 3. | a. | Demonstrate the usage of relational and logical operators with a suitable example. | CO1 | 10 |
| b. | Create menu driven Java application for Bus Ticket Booking System. The application must contain an user interface “BusTicket” with following operations. Create any two Bus class to implement the concept. Perform those operations in different way for every Bus.  i) Search Ticket (By Bus with date and time)  ii) Book Ticket  iii) Cancel Ticket  iv) Print Ticket | CO2 | 10 |
| **(OR)** | | | | |
| 4. | a. | Write a Java program to calculate the CGPA of the students and give comment on their performance. | CO2 | 10 |
| b. | Write a program in Java to display the following pattern for ‘n’ number of rows.  1  1 2  1 2 3  1 2 3 4 | CO2 | 10 |
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| 5. | a. | Elaborate on method overriding with suitable example. | CO2 | 10 |
| b. | Write a program in Java to maintain the Book details in a library by using the concepts of constructors, getter/setter methods, and array of objects. The user has to be given the options to add, search and display book details. | CO4 | 10 |
| **(OR)** | | | | |
| 6. |  | Write a program in Java for Employee management system using the concepts of inheritance. Assume that there are two types of employees such as Teaching Faculty and Non-Teaching Faculty.  Note:  i) Employee should have following data members:  name, id, age, dept, experience, basic\_pay, LIC, DA, HRA,  gross\_salary.  ii) Create following methods:  get\_Data(), salary\_calculation( ) & display ( )  iii) Use following formula for calculating salary:  For Teaching Faculty,  gross\_salary = basic\_pay + DA + HRA - LIC  For Non-Teaching Faculty,  gross\_salary = basic\_pay + HRA – LIC. | CO2 | 20 |
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| 7. | a. | Write a program in Java to calculate the area & perimeter of various shapes such as Circle, Rectangle & Square using the concept of interfaces. | CO3 | 10 |
| b. | Design and develop a basic calculator using the concepts of Applets, Event Handling and AWT Controls. | CO3 | 10 |
| **(OR)** | | | | |
| 8. | a. | Develop a multithreaded Java program to create two threads. One thread must display odd numbers between 1 to 100 and another thread must display even numbers between 1 to 100. | CO4 | 10 |
| b. | Demonstrate any 10 java supported String class methods with a suitable code. | CO4 | 10 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Explain Bio-Java module for i) Blast Analysis ii) Pubmed search with examples. | CO5 | 10 |
| b. | Using Bio-Java, explain biological sequence analysis methods. | CO6 | 10 |