



Code No: 823AD

**R15****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****MCA III Semester Examinations, December - 2019****JAVA PROGRAMMING****Time: 3hrs****Max.Marks:75**

**Note:** This question paper contains two parts A and B.  
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

**PART - A****5 × 5 Marks = 25**

- 1.a) What is Type casting? Describe implicit & explicit typecasting with examples. [5]
- b) Why do we need Abstract classes in Java? Demonstrate with suitable example. [5]
- c) What is Java Collection Framework? List out benefits of Collections. [5]
- d) Illustrate the uses of throw & throws clause. [5]
- e) What are the limitations of AWT? Enumerate benefits of SWING over AWT. [5]

**PART - B****5 × 10 Marks = 50**

- 2.a) Differentiate between Procedure Oriented Programming and Object Oriented Programming. Explain OOP features in detail.
- b) Write a Java Program to display all even numbers and sum of even numbers from 1 to 100. [6+4]

**OR**

- 3.a) What is a Constructor? Demonstrate Copy Constructors and Parameterized Constructors with suitable examples.
- b) Enumerate auto boxing and unboxing concepts with an example. [6+4]
- 4.a) What is Inheritance? Explain different types of inheritance in JAVA.
- b) Write a Java Program for demonstration of final variables, final classes and final methods. [6+4]

**OR**

- 5.a) What are the benefits of inner classes? Differentiate between inner class and local inner class.
- b) Write a JAVA program for creating a sub package in JAVA. [5+5]
- 6.a) Differentiate Array List and Linked List with suitable examples.
- b) Describe concurrent collection classes in brief. [6+4]

**OR**

- 7.a) What is a random access file? Why do we need it?
- b) Create a Random Access file stream for the file "student.txt" for uploading the student information in to the file? [4+6]

- 8.a) Describe Built-in Exceptions in Java.  
b) Explain nested try statements and multiple catch statements in Java with an example program. [5+5]

**OR**

- 9.a) What is the difference between multiprocessing and multithreading?  
b) How to start a thread? Write a java program for implementation of multithreading concept. [4+6]

- 10.a) Describe Event class & Event Listener. Explain about Event delegation Model.  
b) How to handle Mouse Events in java? Illustrate with an example. [5+5]

**OR**

11. Write a program using Java Swing for implementation of given components. [10]  
a) JFrame  
b) JButton  
c) JLabel  
d) JTextField

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