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Roll No. : .....

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**B. E. (Fifth Semester) Examination, Nov.-Dec. 2021**

**(New Scheme)**

**(IT Branch)**

**PROGRAMMING in JAVA**

***Time Allowed : Three hours***

***Maximum Marks : 80***

***Minimum Pass Marks : 28***

***Note : Attempt all questions. Part (a) from each question is compulsory and carry 2 marks. Attempt any two parts (b), (c) & (d) with carries 7 marks each.***

**Unit-I**

1. (a) What are Literals? Explain with examples.
- (b) Explain architecture of JVM in detail. Describe in detail about the security check performed by the JVM.

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- (c) Explain Garbage collection process in detail.
- (d) Explain enhanced for loop with a program.

### Unit-II

- 2. (a) Explain command line arguments with a program.
- (b) What are Inner classes? Explain types with program.
- (c) How we can access concrete methods of abstract class? As we know we cant create objects of it. Explain the process with a program.
- (d) What is Inheritance? Explain types of inheritance with example codes.

### Unit-III

- 3. (a) What is Collections Framework?
- (b) How to use multiple catch statement? Write a program to catch multiple exceptions.
- (c) Write a program to demonstrate throw and throws keyword.

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- (d) What is the difference between String and String Buffer? Explain any five methods of String Buffer class.

### Unit-IV

- 4. (a) What is Deadlock?
- (b) Write a program in which a Mythread class is created by implementing the Runnable interface. In another class, create two objects of the Mythread class and run them. In the run method print "JAVA" 10 times. Identify each thread by setting the name.
- (c) Write a program to illustrate any seven Thread methods.
- (d) Explain Byte and Character stream. Write a program to find numbers of occurrence of vowels in a file.

### Unit-V

- 5. (a) Differentiate between applet and applications.
- (b) What is JDBC? Write a program to insert, delete and update a record into a database.

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- (c) What is the use of Layout Managers? Explain Flow, Grid and Border layout with program.
- (d) Explain the concept of event handling in Java. Write a program to illustrate any three listeners for event handling.