

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

**M.Sc. (IT) (Sem.-4)**  
**ADVANCED JAVA PROGRAMMING**

**Subject Code : MSIT-401**

**M.Code : 74113**

**Date of Examination : 05-07-22**

**Time : 3 Hrs.**

**Max. Marks : 60**

**INSTRUCTIONS TO CANDIDATES :**

1. **SECTIONS-A, B, C & D** contains **TWO** questions each carrying **TEN** marks each and students have to attempt any **ONE** question from each **SECTION**.
2. **SECTION-E** is **COMPULSORY** consisting of **TEN** questions carrying **TWENTY** marks in all.

**SECTION-A**

1. State and explain the methods used for Thread Synchronization.
2. Explain the following with examples :
  - a) Callables and Futures.
  - b) Semaphores.

**SECTION-B**

3. Explain the various APIs and methods used for streaming of data in Java.
4. What is Serialization? How security is ensured in serialization in Java? Explain with an example.

**SECTION-C**

5. Write a code segment to create connection to access database through a Java application and display list of tables in the database. Assume suitable data.
6. Explain the methods and properties defined by the JDBC Statement, Callable Statement, and Prepared Statement interfaces.

## SECTION-D

7. What is the purpose of Reflection API in Java? What are the problems of Reflection? Explain its use with the help of Java code example.
8. What are Annotations in Java? Where Annotations are used? How user defined annotations are created? Discuss the categories of annotations in Java.

## SECTION-E

### 9. Answer the following in brief :

- a) Define Multithreading.
- b) What are Daemon threads?
- c) What are atomic variables? What is their use?
- d) What are the problems of concurrency?
- e) What is Result Set in Java?
- f) Define JDBC.
- g) Explain ACID properties.
- h) What is the use of Generics?
- i) Write JavaBeans naming conventions.
- j) Discuss the concept of Erasure.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**