Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐☐   Total No. of Pages : 02

Total No. of Questions : 09

M.Sc. (IT) (2015 Onwards)   (Sem.–4)
ADVANCED JAVA PROGRAMMING
Subject Code : MSIT-401
M.Code : 74113

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. What is an IO stream? What is the necessity of two types of streams – byte streams and character streams? Explain.

2. What is meant by Stream and what are the types of Streams and classes of the Streams?

SECTION-B

3. How can we create a Thread in Java? What are different states in lifecycle of Thread? How does thread communicate with each other?

4. What is Lock interface in Java Concurrency API? What are its benefits over synchronization?

SECTION-C

5. What is JDBC? What is the use of JDBC? Explain with suitable examples.

6. a) Explain different types of JDBC drivers.

   b) Explain about Establishing the Database Connection.

SECTION-D

7. Describe Annotations. Explain about the creation of user defined Annotations.

8. a) What are Java Beans? Give example. What is the serializable class in Java Beans?

b) What are the properties of Java Beans? How to control serialization in Java Beans?

SECTION-E

9. Write short notes on following with help of example/diagram if needed :

a) Explain threads in Java.

b) What is synchronization and why is it important?

c) What state does a thread enter when it terminates its processing?

d) What is difference between object oriented programming language and object based programming language?

e) Java is fully Object oriented language or not? Why?

f) What are the steps to connect to the database in Java?

g) Discuss Atomic variables and Locks.

h) Write note on Annotations.

i) What are the advantages of Annotations?

j) Write the use of exception handling in java.

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.