Roll No. [ ] Total No. of Pages : 02

Total No. of Questions : 09

MCA (2015 & Onwards) (Sem.–3)

JAVA PROGRAMMING

Subject Code : MCA-304

Paper ID : [74076]

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 has to attempt any ONE question from each SECTION.**
2. **SECTION-E is COMPULSORY consisting of TEN questions carrying TWENTY marks in all.**
3. **Use of non-programmable scientific calculator is allowed.**

SECTION-A

1. (a) *'Java is both compiled and interpreted'.* Discuss. 5

   (b) Discuss the scope of protected members in the inheritance hierarchy. 5

2. (a) Discuss the role of break and continue statements by giving suitable examples. 4

   (b) Discuss the role of super keyword in Java. 6

SECTION-B

3. Write down the fundamentals of Exception Handling and Multithreaded Programming. 10

4. What is the importance of thread synchronization in multithreading? How do you synchronize conflicting threads? 10

SECTION-C

5. Explain basic components of JDBC. Explain in detail different drivers of JDBC. 10

6. What do you mean by graphic programming? Explain process of applying 2-d transformation on object with the help of suitable example. 10

SECTION-D

7. What do you mean by JSP? Explain JSP scripting elements and directives. 10

&

   What do you mean by Servlet & Servlet chaining? Explain it using suitable example. 10

SECTION-E

9. **Write briefly :**

   a) Explain Java web server.

   b) Discuss the need of inner classes.

   c) Explain RMI Client.

   d) What are remote objects?

   e) Write short note on J2EE.

   f) Explain MVC and JSP.

   g) Discuss java access specifiers.

   h) Differentiate the JAVA and JavaScript.

   i) Explain delegation event model.

   j) What do you understand by resuming and stopping of threads?