Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 40765

M.C.A. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

Third Semester

MC 5304 — PROGRAMMING WITH JAVA

(Regulations 2017)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is JVM?

2. Write a Java program to read two numbers, find the greatest and display the result.

3. What are collection classes in Java?

4. Define an ArrayList. Give example.

5. Outline the use of createStatement( ) method.

6. Define a stored procedure.

7. What are servlets?

8. Write a note on Hibernate.

9. What is a jar file?

10. Outline URL with an example.

PART B — (5 × 13 = 65 marks)

11. (a) Explain the control structures in Java with code snippets.   (13)

Or

     (b) What is an exception? Explain exception handling in Java with relevant examples.   (13)

12. (a) What is generics? Explain the process of defining generic types with code snippets in Java. (13)

Or

(b) What is a set? Explain HashSet and TreeSet in Java with code snippets. (13)

13. (a) What is a relational database? Explain the basic steps to use a relational database in Java. (13)

Or

(b) What is Java swing? Explain the swing class hierarchy with a diagram. (13)

14. (a) Outline the steps in creating a Web application using JSP. (13)

Or

(b) What is a Web framework? Present an outline of the Spring framework with a diagram. (13)

15. (a) What is garbage collection? Why it is needed? When is the garbage collection process invoked? Outline the garbage collection process. (13)

Or

(b) (i) Present an outline of the InetAddress class. (5)

(ii) Explain UDP client server socket interaction with a diagram. (8)

PART C — (1 × 15 = 15 marks)

16. (a) Write a Java program to implement communication between a client and a server using TCP sockets. (15)

Or

(b) Consider the following relations :

STUDENT (ROLLNO, NAME, DATE_OF_BIRTH, GENDER, MOBILE_NO, BRANCH_CODE)

BRANCH (BRANCH CODE, BRANCH_NAME)

The primary keys are underlined. The attribute BRANCH_CODE in relation STUDENT is a foreign key referencing attribute BRANCH_CODE in relation BRANCH. Create the above relations in a relational database of your choice. Develop a Java application using JDBC to insert records into the BRANCH relation and STUDENT relation, update the value of MOBILE_NO in STUDENT relation and display records from the STUDENT relation. (15)

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