Question Paper

MANIPAL ACADEMY OF HIGHER EDUCATION

Manipal School of Information Sciences (MSIS), Manipal

First Semester Master of Engineering - ME (Embedded Systems) Degree Examination - January 2023

Database Programming in Java (Elective-1) [ESD 5133]

Marks: 100   **Duration: 180 mins.**

Wednesday, January 11, 2023

Answer all the questions.

1)	a) Distinguish between procedure-oriented programming and object oriented programming (TLO 1.1) (5 marks) b) Write a short note on "Data abstraction and data encapsulation" as applied to OOP. (TLO 1.1) (5 marks)	(10)
2)	a) Distinguish between Java Applets and Application (TLO 1.2) (4 marks) b) Discuss the principle "Write once, Run anywhere" in Java. Explain in detail how this principle is achieved (TLO 1.2) (6 marks)	(10)
3)	a) Write a short note on java's Type Conversion and Casting. (TLO 1.2) (4 marks) b) List and explain different selection statements available in java. (TLO 1.2) (6 marks)	(10)
4)	a) Illustrate the concept of constructors in java by providing examples (TLO 2.1) (6 marks) b) Write a short note on Garbage Collection in java (TLO 2.1) (4 marks)	(10)
5)	Discuss the following concepts a) Abstract class (TLO 2.2) (3 marks) b) Multilevel Inheritance (TLO 2.2) (2 marks) c) Dynamic method dispatch (TLO 2.2) (3 marks) d) Method overriding (TLO 2.2) (2 marks)	(10)
6)	Explain with an example various steps involved in creating a GUI (TLO 3.1)	(10)
7)	Distinguish between file processing & database approach (TLO 3.3)	(10)
8)	a) Draw a block diagram of database system environment. Write a short note on each components of it. (TLO 3.3) (5 marks) b) Discuss the various types of DBMS Languages (TLO 3.3) (5 marks)	(10)
9)	a) Explain steps involved in connecting to Database through JDBC (TLO 3.2) (6 marks) b) Write a short note on Connection and Prepared Statement with respect	(10)

to SQL operation of Java (TLO 3.2) (4 marks)

10)   a) Discuss the various types of Aggregate functions in SQL. Write   (10)
examples for at least three functions. (TLO 3.4) (6 marks)
b) Write a short note on nested queries in SQL. (TLO 3.4) (6 marks)

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