

# Question Paper

Exam Date & Time: 12-Feb-2021 (10:00 AM - 01:15 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

MANIPAL SCHOOL OF INFORMATION SCIENCES, MANIPAL  
FIRST SEMESTER MASTER OF ENGINEERING - ME (CLOUD COMPUTING) DEGREE EXAMINATION - FEBRUARY 2021  
Cloud Application Development with Java [CDC 603]

Marks: 100

Duration: 180 mins.

FRIDAY 12, FEBRUARY 2021

Answer all the questions.

- 1) Why do we say that Java works on the "Write once, Run anywhere" principle? Explain in detail how this is achieved (TLO 1.2) (10)
- 2) Briefly describe the following (with reference to Java): (TLO 2.1) (10)
  - a. Finalize method (3)
  - b. Multilevel Inheritance (2)
  - c. Multiple Inheritance (3)
  - d. Constructor (2)
- 3) . (10)
  - a) Explain abstract class with an example. Whether abstract class can be declared final? Justify the answer (TLO 2.1) (3+2)
  - b) Explain the difference between interface and abstract class (TLO 2.1) (5)
- 4)
  - a) Explain Java Streams. (TLO 2.2) (3) (10)
  - b) Discuss at least four methods available in File class, with an example (TLO 2.2) (4)
  - c) Discuss predefined streams (TLO 2.2) (3)
- 5)
  - a) Describe the steps involved in developing the java application with database connectivity (TLO 2.3) (6) (10)
  - b) Illustrate the difference between throw and throws used in the Java Exception Handling with appropriate example. (TLO 2.3) (4)
- 6) Illustrate on different types of data with respect to Big data (TLO 1.1) (10) (10)
- 7) Discuss different phases of the Database design (TLO 3.1) (10) (10)
- 8) Design an ER Diagram for the following Data Requirements (TLO 3.1) (10) (10)
  1. The company is organized into departments. Each department has a unique name, a unique number, and a particular employee who manages the department. We keep track of the start date when that employee began managing the department. A department may have several locations.
  2. A department controls a number of projects, each of which has a unique name, a unique number, and a single location.
  3. We store each employee's name, SSN, address, salary, sex, and birth date. An employee is assigned to one department but may work on several projects, which are not necessarily controlled by the same department. We keep track of the number of hours per week that an employee works on each project. We also keep track of the direct supervisor of each employee.
  4. We want to keep track of the dependents of each employee: first name, sex, birth date, relationship to the employee
- 9) What are the objectives achieved by Normalization? Explain 2nd and 3rd Normal form with appropriate example (TLO 3.2) (2+4+4) (10)

- 10) Explain briefly the key points to be addressed from the Design Consideration of cloud applications (10)  
(TLO 1.1) (10)

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