

Question Paper

Exam Date & Time: 03-Feb-2023 (09:30 AM - 12:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

INTERNATIONAL CENTRE FOR APPLIED SCIENCES END SEMESTER THEORY EXAMINATION - DECEMBER 2022 III SEMESTER B.Sc. (Applied Sciences) in Engg.

Software Design Using Object Oriented Paradigm [ICS 232]

Marks: 50

Duration: 180 mins.

Answer all the questions.

Missing data may be suitably assumed.

- 1) Write a JAVA program to add two matrices. (3)
 - A)
 - B) What are final and this keywords in JAVA? Show with programs. (3)
 - C) How do you use Inheritance in JAVA . Explain (4)
- 2) What are Abstract Classes in JAVA? Explain with program. (3)
 - A)
 - B) What are the rules to draw Class Diagrams? Explain with an example . (3)
 - C) **supermarket automation software (SAS):** The manager of supermarket wants us to develop an automation software. The supermarket stocks a set of items. Customers pick up their desired items from the different counters in required quantities. The customers present these items to the sales clerk. The sales clerk passes the items over a bar code reader and an automatic weighing scale and the data regarding the item type and the quantity get registered. (4)
 - SAS should be the end of a sales transaction prime is bill containing the serial number of the sales transaction, the name of the item, code number, quantity, unit price, and item price. the bill should indicate the total amount payable.
 - SAS should maintain the inventory of the various items of the supermarket. The manager upon query should be able to see the inventory details. in order to support inventory management, the inventory of an item should be