

Question Paper

Exam Date & Time: 27-May-2022 (09:30 AM - 12:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

INTERNATIONAL CENTRE FOR APPLIED SCIENCES IV SEMESTER B.Sc. (Applied Sciences) in Engg. END SEMESTER THEORY EXAMINATION - MAY/ JUNE 2022 DATABASE MANAGEMENT SYSTEMS [ICS 242]

Marks: 50

Duration: 180 mins.

Answer all the questions.

Missing data may be suitably assumed

Design data handbook is permitted

- 1) List six disadvantages of file-processing system. (3)

A)

- B) Write a note on any three types of integrity constraints that can be implemented on database systems. (3)

- C) For the relations R and S given below: (4)

R

A	B	C
1	2	3
4	5	6
7	8	9

S

B	C	D
2	3	10
2	3	11
6	7	12

Compute

- (i) $\Pi_{A,C}(R)$
- (ii) $\sigma_{B=2}(S)$
- (iii) R natural join S
- (iv) R outer join S

- 2) Consider the following relations for a database that keeps track of business trips of salespersons in a sales office: (3)

A)

SALESPERSON (SSN, Name, start_year, Dept_no)

TRIP (SSN, From_city, To_city, Departure_Date, Return_Date, Trip_ID)

EXPENSE (TripID, Account#, Amount)

Specify the following queries in relational algebra:

Give the details (all attributes of TRIP) for trips that exceeded \$2000 in expenses.