

SL No of QP : 3555
Unique Paper Code : 6202451201
Name of the Paper : Database Management Systems
Name of the Course : B.Voc.
Semester : II
Duration : 2 Hours
Maximum Marks : 60

Instructions for Candidates:-

1. Write your Roll no. on the top immediately on receipt of this question paper.
2. Attempt total 4 questions. Q1 is compulsory to attend. Rest, Attempt any 3 questions more.

(15 x 4 = 60 marks)

- Q1.A) List and explain aggregate functions used in SQL with examples. [4M]
B) What is multi valued dependency? Illustrate 4NF with an example. [4M]
C) Differentiate between specialization and generalization. [3M]
D) Define ACID properties of transaction. [4M]

Q2.A) Write Short notes on the following (any 4): [2.5*4=10M]

- 1) Generalization and specialization
- 2) Different types of keys in DBMS
- 3) DDL COMMANDS
- 4) Composite attributes
- 5) Cardinality ratio

B) Consider the following relation schema: [5M]

Sailors(sid: integer, sname: string, rating: integer, age: real)

Boat(bid: integer, bname: string, color: string)

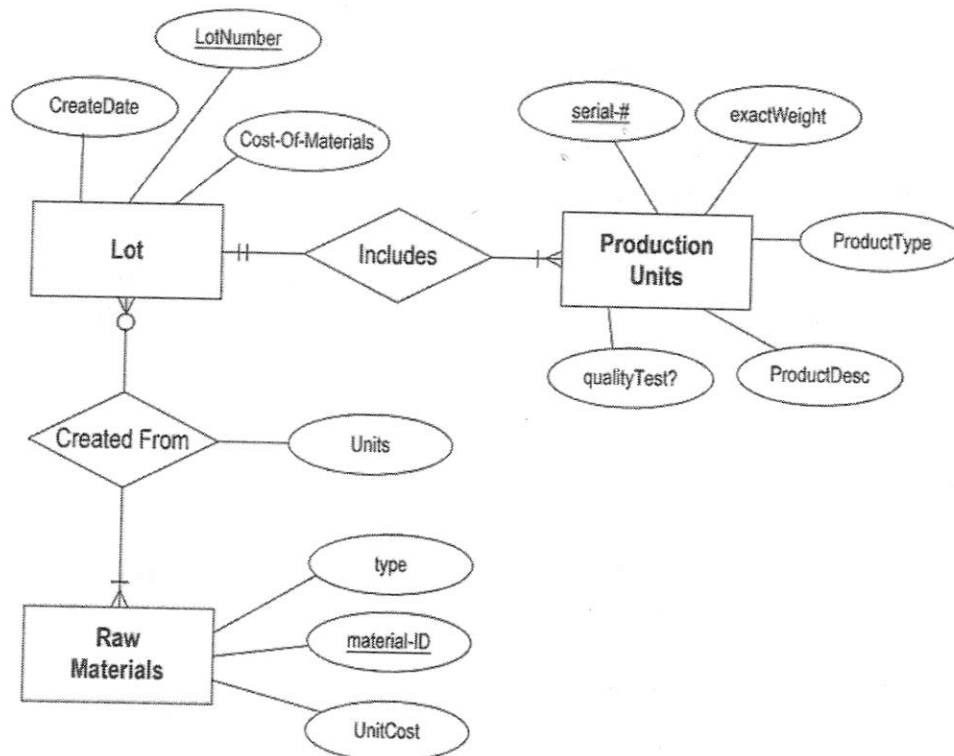
Reserves(sid: integer, bid: integer, day: date)

Write the following queries in SQL.

- (i) Find the average age of the sailor who are eligible for voting for each rating level that has at least two sailors.
- (ii) Find the name of sailors who have reserved both red and a green boat.
- (iii) Find the sailor_id of sailors who have reserved a red boat

Q3. A) Explain about Selection, Projection, Rename, division and Cartesian product operations in relational algebra. [10M]

B) Please convert the ER diagram into a relational database schema. Be certain to indicate primary keys and referential integrity constraints. [5M]



Q4. A) What is join statement? Illustrate different types of joins in SQL with example of each [10M]

B) Explain how groupBy clause works? What is the difference between WHERE and Having? [5M]

Q5.A) Explain the 3-tier architecture of DBMS. Also , explain the schema architecture of DBMS. [10M]

B) State five Dr. E. F. Codd's rules. [5M]

