

1.3 EXCHANGING DATA · 1.3.2

Normalisation to 3NF & referential integrity

Original practice questions · 33 marks · about 45 minutes · spec 1.3.2(c)(e)

Instructions. Answer all questions. The number of marks is shown in brackets []. Quality of written communication is assessed in the extended-response question.

1 Total: 4 marks

This question is about normalisation.

(a) State what is meant by *normalisation*. [1]

(b) Explain **two** benefits of normalising a database. [3]

2 Total: 6 marks

A booking table stores, in one row, a booking and a field listing all the passengers on that booking.

(a) State **two** requirements for a database to be in First Normal Form (1NF). [2]

(b) Explain why this booking table is not in 1NF. [2]

(c) Describe how the table could be changed so that it is in 1NF. [2]

3

Total: 6 marks

A table has the primary key (OrderID, ProductID) and includes the fields ProductName and CustomerName.

(a) Explain why this table is not in Second Normal Form (2NF). [2]

.....

.....

(b) Explain what a transitive (non-key) dependency is, and why it prevents a table being in Third Normal Form (3NF). [3]

.....

.....

.....

(c) State why a table with a single-field primary key and atomic values is automatically in 2NF. [1]

.....

4

Total: 5 marks

This question is about referential integrity.

(a) Explain what is meant by *referential integrity*, giving an example. [3]

.....

.....

.....

(b) Describe one action that would break referential integrity. [2]

.....

.....

