Type your answers to the Databases Exam Practice Questions here:
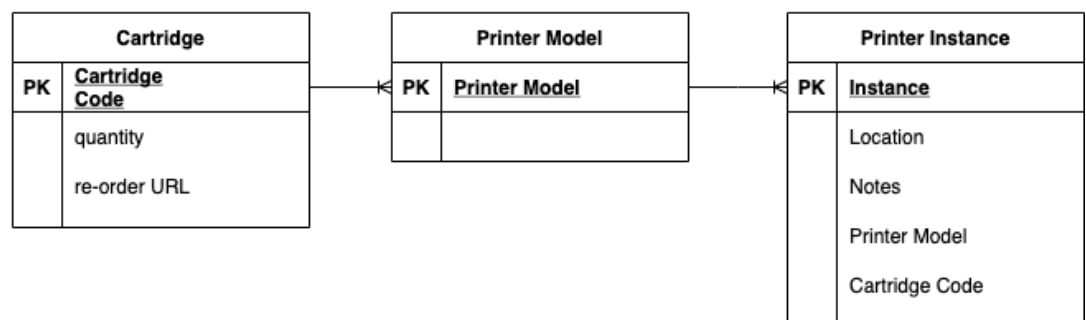
1.
   a.
      i. The primary keys, ProductID and OrderId, are used to uniquely identify each product and order respectively so that each product can be referenced without confusion in an order, and two of the same orders are not confused with each other, since they will have different OderIDs
      ii. The foreign key, ProductID in the ORDER table references / is an attribute from the primary key ProductID in the PRODUCT table, this creates a One to Many relationship where one product can be in many orders, linking the tables together. This means that if product 12345 is ordered as a record in the ORDER table, the product 12345 can be queried in the PRODUCT table since the foreign key matches the primary key.

   b. Customers have to make a new order for each product, since you can't have many products in an order.

   c. The Surname, Title, PhoneNo fields are selected from the Customer table. The town field is then queried and if the customer is from "Coventry" then those records from the Surname, Title, PhoneNo fields are returned for those customers. This could be printed as a report so that a delivery can be made to every customer who made an order in that town.in order of surname ascending, for a local promotion

   d. Stock data - should be an integer used to know if the product is in stock or not, so that customers can order an unavailable product.

2a

2.

3.
   a. Referential Integrity is the maintenance of rules so that information in a database is not duplicated or lost and changes are consistent, and that

foreign keys reference real (existent) primary keys, and that there's a dependency on the primary keys. In the database above, there is referential integrity between the userID assigned to a review to match the UserID of the user who actually wrote the review. Therefore if a user is removed from the database all foreign keys referencing them must be removed 2/4

b. ACID stands for Atomic, Consistency, Isolation, Durability
c. The transaction must happen fully and completely. The review cannot be only partially added to the database. It would not be atomic if it was missing the author of the review. If it did not update the average review

4.

a. Film title is not a suitable primary key since two films with the same title would not be able to be stored. There is no guarantee that two films won't have the same name. Primary keys must be unique
b. Secondary keys are candidate keys that are useful for querying, but do not have to be unique. Film title is a candidate key and it depends on the primary key. Which would make it useful as a secondary key. Indexing makes it faster to search for film name - which is frequently used

5.

a. 3rd normal form requires no non-key dependencies and branch name depends on sort code
b. Splitting the table into two tables, bank account and location. Where sort code is the primary key in the location table and branch name is an attribute that depends on it. In the main bank table the branch name attribute is removed and the sort code is used a foreign key in relation to the sort code in the location table.

6.

6

Customers	
PK	

Parcels	
PK	