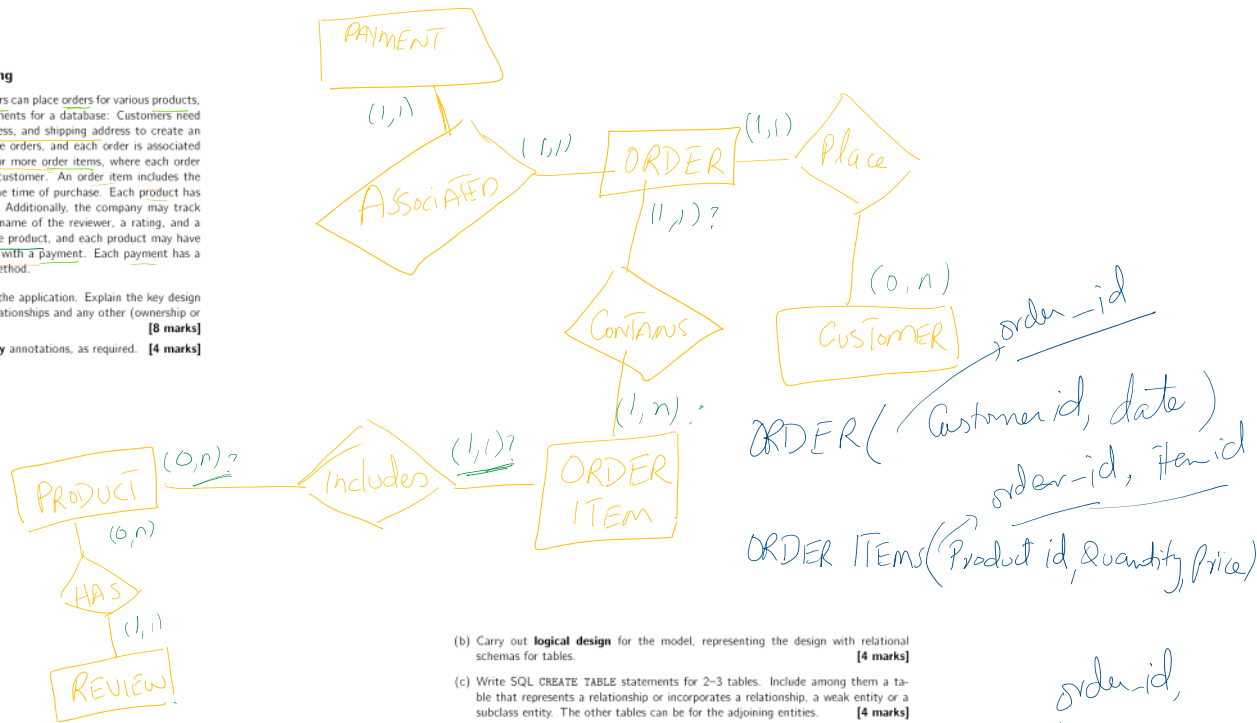


Question 2 Entity-Relationship modelling

A company operates an online store where customers can place orders for various products, and has the following description of their requirements for a database: Customers need to provide details such as their name, email address, and shipping address to create an online account. Each customer may have multiple orders, and each order is associated with only one customer. An order contains one or more order items, where each order item represents a single product ordered by the customer. An order item includes the quantity of the product ordered and its price at the time of purchase. Each product has a unique product ID, a name, and a description. Additionally, the company may track reviews for each product. A review includes the name of the reviewer, a rating, and a comment. Each review is associated with only one product, and each product may have multiple reviews. Finally, each order is associated with a payment. Each payment has a payment ID, an amount, a date and a payment method.

- (a) Develop an **Entity-Relationship model** for the application. Explain the key design decisions made in your choice of entities, relationships and any other (ownership or hierarchical) aspects. [8 marks]

Annotate it with **multiplicities** and **hierarchy** annotations, as required. [4 marks]



- (b) Carry out **logical design** for the model, representing the design with relational schemas for tables. [4 marks]

- (c) Write SQL CREATE TABLE statements for 2-3 tables. Include among them a table that represents a relationship or incorporates a relationship, a weak entity or a subclass entity. The other tables can be for the adjoining entities. [4 marks]

Customer (Customer id, name, email, shipping address)

Product (Product id, name, description)

PAYMENT (Payment id, amount, date, method)

Review (Review id, Name, Rating, Comment, Product id)