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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2023/2024**

COURSE NAME : DATABASE SYSTEM
COURSE CODE : BIT 20803
PROGRAMME CODE : BIT
EXAMINATION DATE : JULY 2024
DURATION : 3 HOURS
INSTRUCTIONS :
1. ANSWER ALL QUESTIONS
2. THIS FINAL EXAMINATION IS CONDUCTED VIA
 Open book
 Closed book
3. STUDENTS ARE **PROHIBITED** TO CONSULT THEIR OWN MATERIAL OR ANY EXTERNAL RESOURCES DURING THE EXAMINATION CONDUCTED VIA CLOSED BOOK

THIS QUESTION PAPER CONSISTS OF **FIVE (5)** PAGES

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TERBUKA

- Q1** (a) Describe transactional data. (4 marks)
- (b) Discuss **TWO (2)** common data quality issues that can affect transactional data. (4 marks)
- (c) How enterprise data are related to database. (4 marks)
- Q2** (a) State the data model elements that can be extracted from the information gathering process.
- (i) What are subjects/objects of the business? (1 marks)
- (ii) What unique characteristic distinguishes each object from other objects of the same type? (1 marks)
- (iii) What characteristics describe each object? (1 marks)
- (iv) How many instances of one entity participate with another entity? (1 marks)
- (v) What events occur that imply associations between various objects? (1 marks)

- (b) Answer Q2(b)(i) – Q2(b)(iii) based on Figure Q2.1. The diagram lacks certain details. Suitable assumptions can be made.

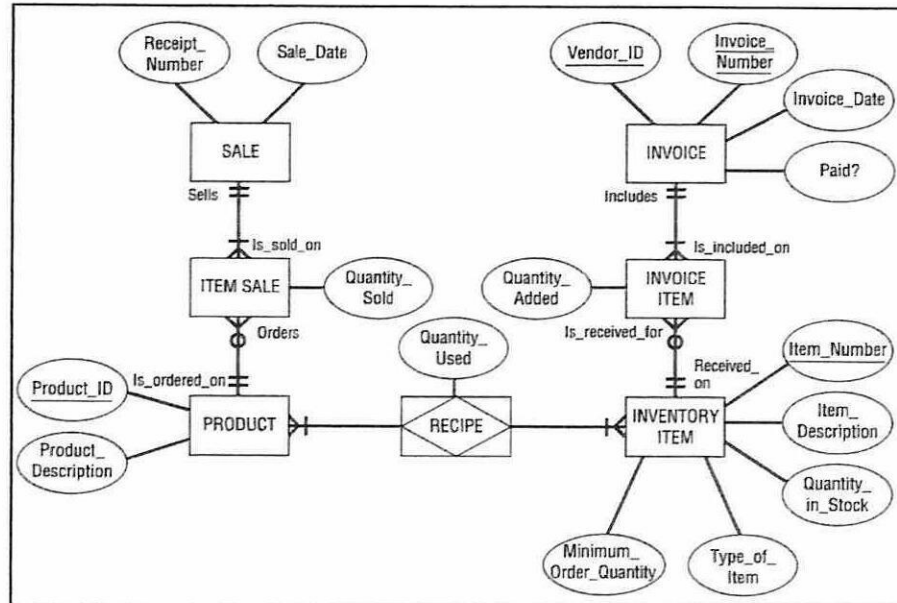


Figure Q2.1

- (i) Identify types of entity. (2 marks)
- (ii) Write all business rules with constraint. (12 marks)
- (iii) Redraw using Crow’s Foot notation. (5 marks)
- (iv) Give **TWO (2)** reports that can be obtained from the database. (4 marks)

- Q3** (a) Write Structured Query Language (SQL) statement based on **Table Q3.1** for **Q3(a)(i) – Q3(a)(iv)**.

Table Q3.1 Movie Table

M_id	Movie_name	Movie_year	Movie_cost	Movie_Genre	Price_Code
1234	The Cesar Family	2007	39.95	Family	2
1235	Mountain Wildlife	2004	59.95	Action	1
1236	Goodhope	2008	59.95	Drama	2
1237	Family Plan	2007	29.95	Comedy	2
1238	Companion	2008	89.95	Drama	2
1239	The Hope	2018	25.49	Drama	3
1245	Time to Burn	2005	45.49	Action	1
1246	Something about Mary	1998	58.29	Comedy	1

- (i) Change the movie year for movie number 1245 to 2012.
(4 marks)
- (ii) Increase all price rental fees value by 0.50.
(4 marks)
- (iii) Display the movie title and movie description for all movies, where the movie description is a combination of the movie title, year, and genre.
(4 marks)
- (iv) Display the movie number, title and price code for all movies with a title that starts with the letter 'T'.
(4 marks)
- (v) Display the average cost of all the movies.
(4 marks)

Q4 Answer **Q4(a)** – **Q4(c)** based on **Table Q4.1**.

Table Q4.1 Dinner Member Table

Attribute name	Sample value	Sample value	Sample value
Member number	214	235	214
Member name	Alice	Gary	Alice
Member address	123 Lucky Park	677 Galley Court	123 Lucky Park
Member city	Rose Town	Algae	Rose Town
Member zip code	766321	453000	766321
Invite number	8	9	10
Invite date	23 Mar 2015	20 Feb 2012	23 Mar 2015
Accept date	27 Mar 2015	23 Feb 2012	27 Mar 2015
Dinner date	15 Apr 2015	25 Feb 2012	15 Apr 2015
Dinner attended	Yes	Yes	No
Dinner code	D15	D15	D12
Dinner description	Glowing delight	Glowing delight	Ranch superb
Entree code	EN3	EN3	EN5
Entree description	Stuffed crab	Stuffed crab	Marinated steak

- (a) Draw dependency diagram. Identify all dependencies. (8 marks)

- (b) Write the relational schema. (12 marks)

- (c) Perform data normalization process to meet the Third Normal Form (3NF) requirements. Show all the steps. (20 marks)

- END OF QUESTIONS -

