Activity#10 – Normalization

Due Date: 1th April 2023 @23.59

Part 1 Normalization [8 Marks]

Q1. Given below is the report. Make the Normalized relations going through 1NF, 2NF and 3NF

DETAILED HEALTH HISTORY REPORT

PET ID	PET NAME	Pet Type	Pet Age	Pet Owner	Adress	Phone	VISIT DATE	PROCEDURE
246	ROVER	DOG	12	SAM COOK	Kamloops	2509877890	JAN 13/2013	01 - RABIES VACCINATION
							MAR 27/2013	10 - EXAMINE and TREAT WOUND
							APR 21/2013	05 - HEART WORM TEST
298	SPOT	DOG	2	TERRY KIM	Kamloops	2509852456	JAN 21/2013	08 - TETANUS VACCINATION
							MAR 10/2013	05 - HEART WORM TEST
341	MORRIS	CAT	4	SAM COOK	Kamloops	2345678910	JAN 23/2012	01 - RABIES VACCINATION
							JAN 13/2013	01 - RABIES VACCINATION
519	TWEEDY	BIRD	2	TERRY KIM	Kelowna	5678996544	APR 21/2013	20 - ANNUAL CHECK UP
							APR 30/2013	12 - EYE WASH

This is One Pet has Many visits.

Q2.

A table is in 2NF if the table is in 1NF and what other condition is met?

- There are no functional dependencies.
- There are no null values in primary key fields.
- There are no repeating groups.
- There are no attributes that are not functionally dependent on the relation's primary key. [2 marks]

Q3. Use the following table: [2 marks]

Consider a relation R (A, B, C, D, E, F, G, H), where each attribute is atomic, and the following functional dependencies exist.

CH → G, A → BC, B → CFH, E → A, F → EG

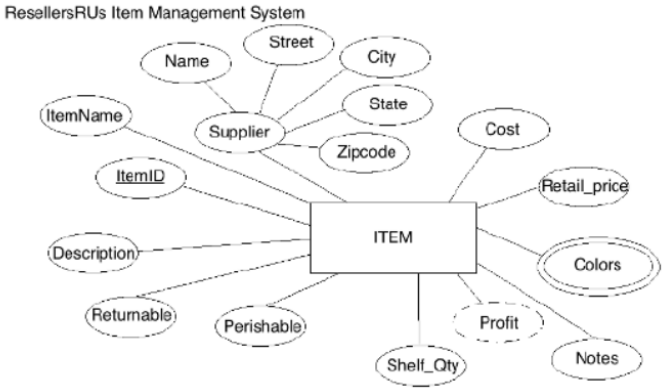
The relation R is

What is the correct situation:

a. **In 1NF but not in 2NF**
b. **In 2NF but nit in 3NF**
c. **In 3NF but not BCNF**
d. **In BCNF**

Q4.[8 marks]

Given the E-R diagram, the resulting relation, and the functional dependencies below, normalize the ITEM relation and resulting relations through BCNF. Be sure to use proper relational notation and reference statements for foreign keys.



Resulting Relation:
ITEM(ItemID, ItemName, Name, Street, City, State, Zipcode, Cost, Retail_price, Color1, Color2, Notes, Shelf_Qty, Perishable, Returnable, Description)

Functional Dependencies:
ItemID ➔ ItemName, Name, Street, City, State, Zipcode, Cost, Retail_price, Color1, Color2, Notes, Shelf_Qty, Perishable, Returnable, Description

Name ➔ Street, City, State, Zipcode

YOUR ANSWER (Final set of relations normalized to BCNF):