Database Development 1

Instructions to Candidates:

1. Read each question carefully.
2. You must answer ALL sections.
3. Answer all questions in the answer book provided.
4. All rough work should be done in the back of the answer book and indicated as such.
5. This test paper should not be removed from the venue.
6. Indicate what resources could be used (e.g. calculator, dictionary, statistical tables)

Important Notes:
- This test paper consists of _11_ pages
- This test contributes 50% towards the final mark.

Section A

True or False 1 mark per question	20 Marks

Already completed in Section A on Smart Assessments in the form of MCQ

SUBTOTAL: [20]

Section B

Missing word 1 mark per question	10 Marks

Already completed in Section A on Smart Assessments in the form of MCQ

SUBTOTAL: [10]

Section C

Normalisation and ER diagram	70 Marks

Scenario

Tygervalley Pet Shelter

Tygervalley Pet Shelter (TPS) receives food donations from a group of pet food manufacturers.

TPS relies on each manufacturing company for a particular need. For example, Veggie Land supplies all the vegetables and Premier Seed Suppliers supplies all the seeds. The different food types are allocated to the animals according to their category. For example, food type 'seeds' is allocated to category 'Birds', while food type 'vegetables' is allocated to the categories 'Mammals' and 'Birds'.

Each animal category is subdivided into different pet types. For example, the mammal record could relate to pet types 'Dog' and 'Cat'.

TPS has recruited you to be their database designer. The database will store information on their suppliers, food types, animal categories, and pet types.

- Record a unique, auto-incrementing ID, company name, contact number, and possibly an email address for each manufacturer.
- When recording information about the different food types, ensure that the expiry date is also stored.
- When recording how much food will be allocated per animal category, specify the quantity amount as two separate fields. For example, if 8.5 kilograms of Roast Chicken Pellets are allocated to category 'Mammals', '8.5' and 'kg' will be two different fields.

- ==The stock level for each pet type must also be stored together with the pet type so <u>that thenumber</u> is known for each category==. For example, there are 10 dogs and 20 cats for category'Mammals', or 40 parrots for category 'Birds'.

Initial ER diagram

Draw an ER diagram which must indicate the following:

- Optionality of relationships (may or must)
- Cardinality of relationships (one or many)
- Optionality of attributes (* or o)
- Clear indication of PKs and FKs
- Named relationships and entities

Answer

Listing Raw Data

#*Manufacture ID

*Manufacture Name

*Manufacture Telephone

oManufacture Email

#*FoodCategory ID

*Food Type

*Animal category ID (FK)

*Food Status (expirery date)

*Food Quantity (kg or g)

#*Animal Category ID

*FoodCategory ID (FK)

*Pet types (mammal , birds ..e.t.c)

*pet name

#*Allocation ID

*Animal Category ID (FK)

*Pet Stock (number of pets per category)

INITIAL DIAGRAM   **Step1**

MANUFACTURE

#*Manufacture ID ✓

*Manufacture Name ✓

*Manufacture Telephone ✓

oManufacture Email

relationship names missing: -8
Entities wrongly related: -8
24/36 possible

FOOD CATEGORY ✓

#*FoodCategory ID ✓

*Food Type

*Food Name

*Animal category ID (FK)

*Food Status ✓

*Food Quantity

✓

✓

FOOD CATEGORY/ ANIMAL CATEGORY ✓

✓

ANIMAL CATEGORY ✓

#*Animal Category ID

*FoodCategory ID (FK)

*Pet types ✓

*pet name

ALLOCATION

*Food Name

*Food quantity

*Animal Category ID (FK)

*Pet Stock
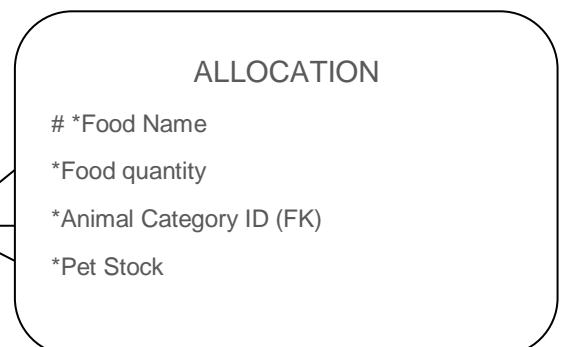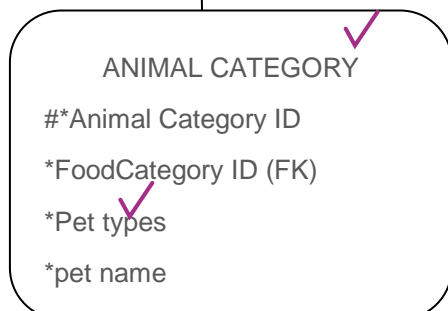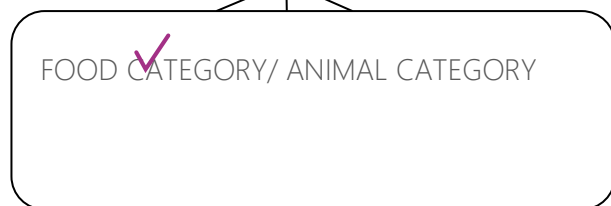
Use normalisation

- Place the attributes in zero normal form.
- Normalise the attributes to third normal form. Show each of the intermediate normal forms.
- Draw an ER diagram from the third normal form.

ANSWER   Step 2

ONF

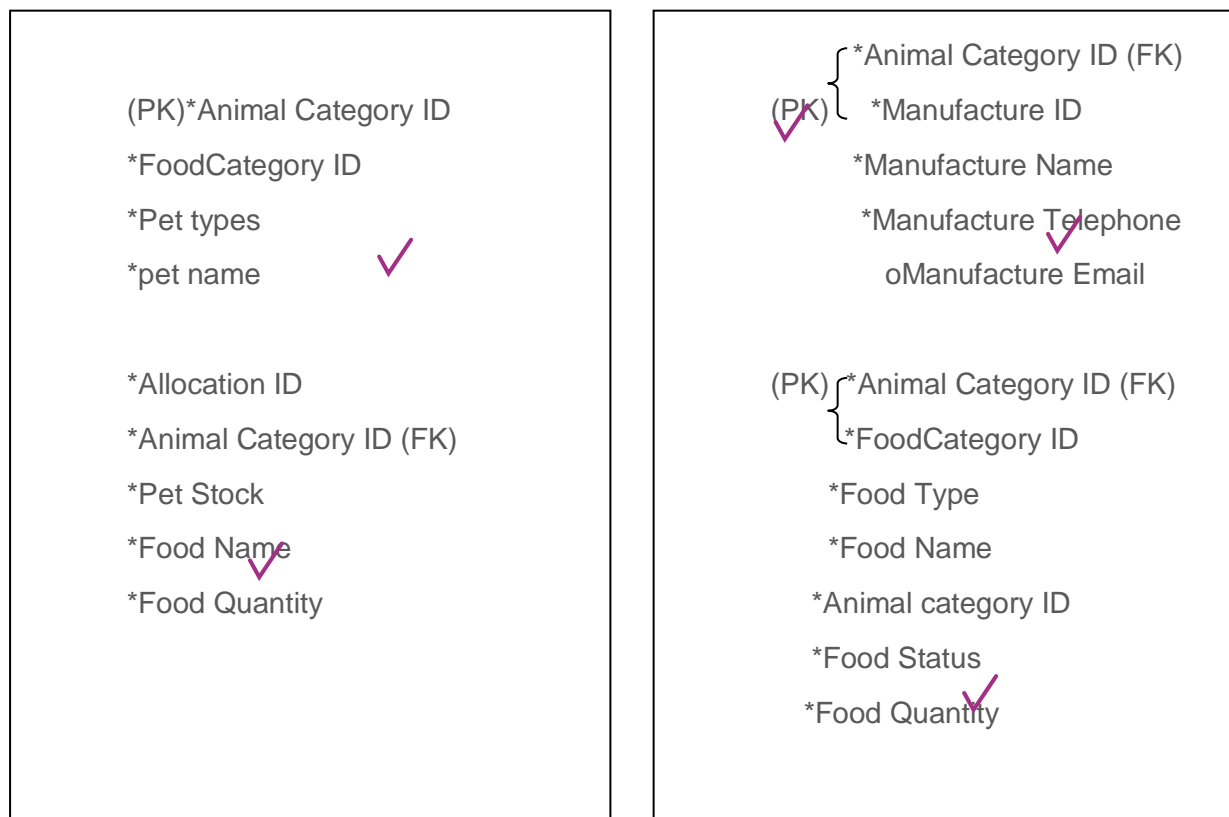*Manufacture ID
*Manufacture Name
*Manufacture Telephone   ✓
oManufacture Email

*FoodCategory ID
*Food Type   ✓
*Food Name
*Animal category ID
*Food Status
*Food Quantity

                              ✓

(PK)*Animal Category ID   ✓
*FoodCategory ID
*Pet types
*pet name

*Allocation ID   ✓
*Food quantity
*Food Name
*Animal Category ID (FK)   ✓
*Pet Stock

1NF

(removing repeating groups)

(PK)*Animal Category ID
*FoodCategory ID
*Pet types
*pet name ✓

*Allocation ID
*Animal Category ID (FK)
*Pet Stock
*Food Name
*Food Quantity ✓

(PK) { *Animal Category ID (FK)
       *Manufacture ID ✓
       *Manufacture Name
       *Manufacture Telephone ✓
       oManufacture Email

(PK) { *Animal Category ID (FK)
       *FoodCategory ID
*Food Type
*Food Name
*Animal category ID
*Food Status
*Food Quantity ✓

2NF

(Removing Part-Key Dependencies)

(PK)*Animal Category ID

*FoodCategory ID

*Pet types

*pet name ✓

*Allocation ID

*Animal Category ID (FK)

*Pet Stock

*Food Name

*Food Quantity

(PK) { *Animal Category ID (FK)
      *Manufacture ID ✓ }

(PK) { *Animal Category ID (FK)
      *FoodCategory ID }

*FoodCategory ID

*Food Type ✓

*Food Name

*Animal category ID

*Food Status

*Food Quantity

✓

(PK)*Manufacture ID ✓

*Manufacture Name

*Manufacture Telephone

oManufacture Email

3NF

(PK)*Animal Category ID *FoodCategory ID *Pet type *pet name	*Allocation ID 　　*Animal Category ID (FK) 　　*Pet Stock 　　*Food Name 　　*Food Quantity	*Animal Category ID (FK) (PK)　*Manufacture ID
(PK) *Animal Category ID 　　*FoodCategory ID	*FoodCategory ID 　*Food Type 　*Food Name 　*Animal category ID 　*Food Status 　*Food Quantity	(PK)*Manufacture ID 　*Manufacture Name 　*Manufacture Telephone 　oManufacture Email

ANIMAL CATEGORY

(PK)*Animal Category ID

*FoodCategory ID

*Pet type

*pet name

(PK) *Animal Category ID

*FoodCategory ID

---

no relations and many to many resolved : -8
FK not shown in child tables: -2
5/15 possible

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*FoodCategory ID

 *Food Type

*Food Name

*Animal category ID (FK)

*Food Status

---

*Animal Category ID

*Manufacture ID

(PK)*Manufacture ID

*Manufacture Name

*Manufacture Telephone

oManufacture Email

---

*Animal Category ID

*FoodCategory ID

Mapping to tables

Create an initial database design from the ER diagram created from 3NF and provide at least two rows of sample data.

more info needed for more marks : -7

MANUFACTURE				
Column names	Manufacture ID	name	telephone	email
Key type	PK			
Nulls	NN	NN	NN	
Sample data	125	Veggie Land	07235447	Veggie @email.com

✓

✓

✓

Mark allocation for student			
Section	Sub-section	Maximum Mark	Learner mark
Section C	Initial ER diagram	14	
	Normalisation – 0NF	7	
	Normalisation – 1NF	8	
	Normalisation – 2NF	8	
	Normalisation – 3NF	8	
	ER diagram from 3NF	15	

	Mapping to tables from ERD	10	
	Total:	70	48

PRE-ASSESSMENT AGREEMENT

Assessment Preparation: Preparing the Candidate

Student name and surname		Date	
		Time	
Assessor name and surname		Venue	

How to prepare the candidate	Document Requirements	Agree (tick)	Action Required
Explain to the candidate why you are meeting and the purpose of the assessment.	Assessment Policy Assessment process	✓	
Discuss the assessment plan	Assessment strategy	✓	

in detail.			
Explain assessment process, show assessment instruments to candidate and describe assessment conditions.	Assessment instruments	✓	
Identify the role-players during assessment.	Assessors Moderator	✓	
Describe the evidence required to be declared competent.	Examples of evidence	✓	
Explain how evidence will be judged.	Mark allocation explained	✓	
Explain to the candidate how to prepare: Give candidate assessment task description.	Assessment task description	✓	
Confirm with the candidate what he/she should bring to the assessment.	Detailed briefing on exact requirements to be given to candidate in writing	✓	
Ensure that candidate understands the procedures of all assessment practices.	Appeals Policy Appeals procedure Assessment Policy Assessment Procedure Moderation Policy Moderation procedure Verification Policy Verification Procedure	✓	
Ask the candidate if he/she foresees any problems or identify any special needs.	List needs	✓	

Agreed Assessment Plan	
Student name and surname:	Tafadzwa Chiripanyanga
Assessor name and surname:	
Module name:	Database Development 1
Unit Standard/s:	US115365 US114049
Type of Assessment i.e. Formative assignment, Formative test, Formative Practical, Summative etc.	Summative Assessment 1

Special Assessment Requirements:		N/A	
Event	Date, time and location	Resources required	Evidence to be generated
Assessments due date		Assessments	Completed documentation
Complete activity on MyAIE and upload to MyAIE			Completed Portfolio of Evidence
Submit Portfolio of Evidence			

Assessor Roles and Responsibility	
Roles	Assessor Guide Feedback Agent Reviewer
Responsibilities	Consult candidate re-assessment, assessment process and plan. Agree assessment process and plan with candidate. Forward documentation to candidate: plan, guide and assessment instruments. Assess candidate with the use of different instruments. Provide feedback on assessment findings. Support candidate through assessment process. Source feedback from candidate on assessment process. Review assessment process and outcome. Use assessment process as opportunity to transform assessment activities and outcomes.

Candidate Roles and Responsibility	
Roles	• Leaner • Feedback agent • Reviewer
Responsibilities	• Be available for assessment. • Be actively involved in the consultative process. • Learn from the assessment process. • Provide feedback to the assessor in terms of the assessment as learning activity. • Provide feedback to the assessor on the efficacy of the

	• assessment process. • Review own role and assessor role in the assessment process.
Assessment Instruments	• Portfolio of Evidence • Questionnaire • Report • Presentation • Reflexive questions • Work sample • Practical's • Group Activity • Research activities

Assessment Process		
• Evaluation of POE addressing Essential Embedded Knowledge in unit standards. • Evaluation of Research Projects and other evidence addressing specific unit standards. • Consultation: assessment plan and assessment activities and instruments. Pre-assessment moderation and interviews conducted at this stage. • Observation: feedback on assessment against specific outcomes, critical outcomes in unit standards. • Feedback: to candidate regarding sufficiency of evidence and possible interview to gain supplementary evidence. • Feedback to candidate regarding assessment findings as well as review process.		
	Feedback	Written feedback to be given to all stakeholders at the end of the assessment process, as well as verbal feedback to the candidate during assessment activities.
	Recording Process	Process and findings to be recorded and submitted for record keeping purposes as well as moderation and verification.
	Review Process	The review process is the responsibility of the assessor and the candidate. Joint reviewing will take place after feedback has been given to the candidate.
	Right to appeal	The candidate must be advised of the right to appeal.
	Resources Required	Assignments • POE • Assessments • Guides
I confirm that: • I have been consulted on and have agreed to the training and assessment process as detailed in the assessment guide. • I have been advised of my right to appeal against any assessment that is unfair, unreliable, invalid or impracticable.		

- I have read and understood the appeal procedure.
- I know that assessments may be moderated or verified by an external party.
- The purpose of the assessment has been clearly explained to me.
- The criteria have been discussed with me, and I know I will be assessed against these criteria.
- I know when and where I will be assessed, and I was given fair notice.
- I know how the assessment will be done, and any other requirements related to the assessment.

Signed: ___Tafadzwa_____   Date: __18/08/2023_____

Overall Assessment Decision	Competent	C	Not yet competent	
Student's Signature	Tafadzwa		Date:	18/08/2023
Assessor's Signature			Date:	
Moderator's Signature			Date:	

ASSESSMENT FEEDBACK AGREEMENT

Assessment feedback: Feedback to learner

Qualification Name:	
Qualification SAQA Number:	
Subject Name:	Database Development 1
Subject Code:	DADE1
Assessment Name:	Summative Assessment 1
Assessment Code:	DADE1_SA1
Assessment Type:	Summative

Feedback report	1st Attempt		2nd Attempt	
	C	NYC	C	NYC
Unit standard Number(s)				
Section C	C			

General feedback to learner (Attempt 1)
Supply comprehensive feedback why learner is found NYC
student found competent   68 %

Learner Number:	258196		
Learner name and surname:	Tafadzwa chiripanyanga	Date:	18/08/2023
Learner Signature:	Tafadzwa		
Lecturer name and surname:	Daniel van Deventer	Date:	2/9/2023
Lecturer Signature:	DVD		
Assessor name and surname:		Date:	
Assessor Signature:			
Moderator name and surname:		Date:	

Moderator Signature:	

Note to learner
Review the feedback provided by your lecturer to check that you have been found competent in this assessment. If there are any areas where you have been found not yet competent, you must redo those parts of the assessment and resubmit within the stipulated time frame. The section below will only be completed in cases where the learner was asked to resubmit parts of the assessment where they were found not yet competent.

General feedback to learner (Attempt 2) Supply comprehensive feedback why learner is found NYC

Learner Number:			
Learner name and surname:		Date:	
Learner Signature:			
Lecturer name and surname:		Date:	
Lecturer Signature:			
Assessor name and surname:		Date:	

Assessor Signature:		
Moderator name and surname:		Date:
Moderator Signature:		