NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
VAAL TRIANGLE CAMPUS

SEMESTER TEST ★ SEMESTER TOETS

MODULE CODE/KODE	**ITRW 213**	DURATION/DUUR	**2h**
EXAMINER/EKSAMINATOR	**Imelda Smit**	MARKS/PUNTE	**60**
MODERATOR	**Prof Roelien Goede**	DATE/DATUM	**20-04-2015**
		TIME/TYD	**10:00**

MEMORANDUM

Answer all the questions .★ Beantwoord al die vrae.

Question 1 | Vraag 1 [Chapter 1-3, 5 | Hoofstukke 1-3, 5] [15]

(1.1) Discuss and interpret the **Systems Development Process** regarding to your **own project.** Make use of a table.

(1.2) Name and discuss the **building blocks** of Information Systems from the given **perspectives** in the table below.

5

6

(1.1) Bespreek en interpreteer **die Stelselontwikkelingsproses** ten opsigte van **jou eie projek**. Maak gebruik van 'n tabel.

(1.2) Noem en bespreek die **boustene** van Inligtingstelsels uit die gegewe **perspektiewe** in die onderstaande tabel.

Building Blocks / Roles	1.	2.	3.
Users			
System Designers			
System Builders			

(1.3) Explain what **a Capability Maturity Model** is.

(1.4) Explain what the **Model-Driven Analysis Approach** is.

2

2

(1.3) Verduidelik wat 'n "**Capability Maturity Model**" is.

(1.4) Verduidelik wat die **Modelgedrewe Analise-benadering** is.

Answer (1.1) See p. 30

System Development Process Steps	Problem-Solving Regarding Project
1. System Initiation ½✓	• Identify the problem (own interpretation) ½✓
2. System Analysis ½✓	• Analyze and understand the problem (own interpretation) ½✓ • Solution Requirements and Expectations (own interpretation) ½✓
3. System Design ½✓	• Alternative Solutions, choose best cause (own interpretation) ½✓ • Design Chosen solution (own interpretation) ½✓
4. System Implementation ½✓	• Implement chosen solution (own interpretation) ½✓ • Evaluate (own interpretation) ½✓
½✓ - table format	

Mark allocation: See allocated marks (max 5marks)

Answer (1.2) See p. 46 - 58

Building Blocks / Roles	1. Knowledge ½✓	2. Process ½✓	3. Communication ½✓
Users	Supply data requirements ½✓	Process requirements and work flows ½✓	Inputs and Outputs of prototype ½✓
System Designers	More concerned with the Database technology ½✓	Processes to automate and software specifications ½✓	Technical design such as interface specifications ½✓
System Builders	Concerned with database management system technology ½✓	Precise computer programming languages ½✓	Construct, install, test and implement user and system-to-system interface ½✓

Mark allocation: See marks allocated (max 6 marks)

Answer (1.3) See p. 69

A standardised framework ½✓ for assessing the maturity level ½✓ of an organisation's information system development and management process and products ½✓ It consists of 5 levels of maturity. ½✓

Mark allocation: See marks allocated

Answer (1.4) See p. 94

A problem-solving approach that emphasizes on drawing ✓ of pictorial system models to document and validate existing and/or proposed systems. ✓

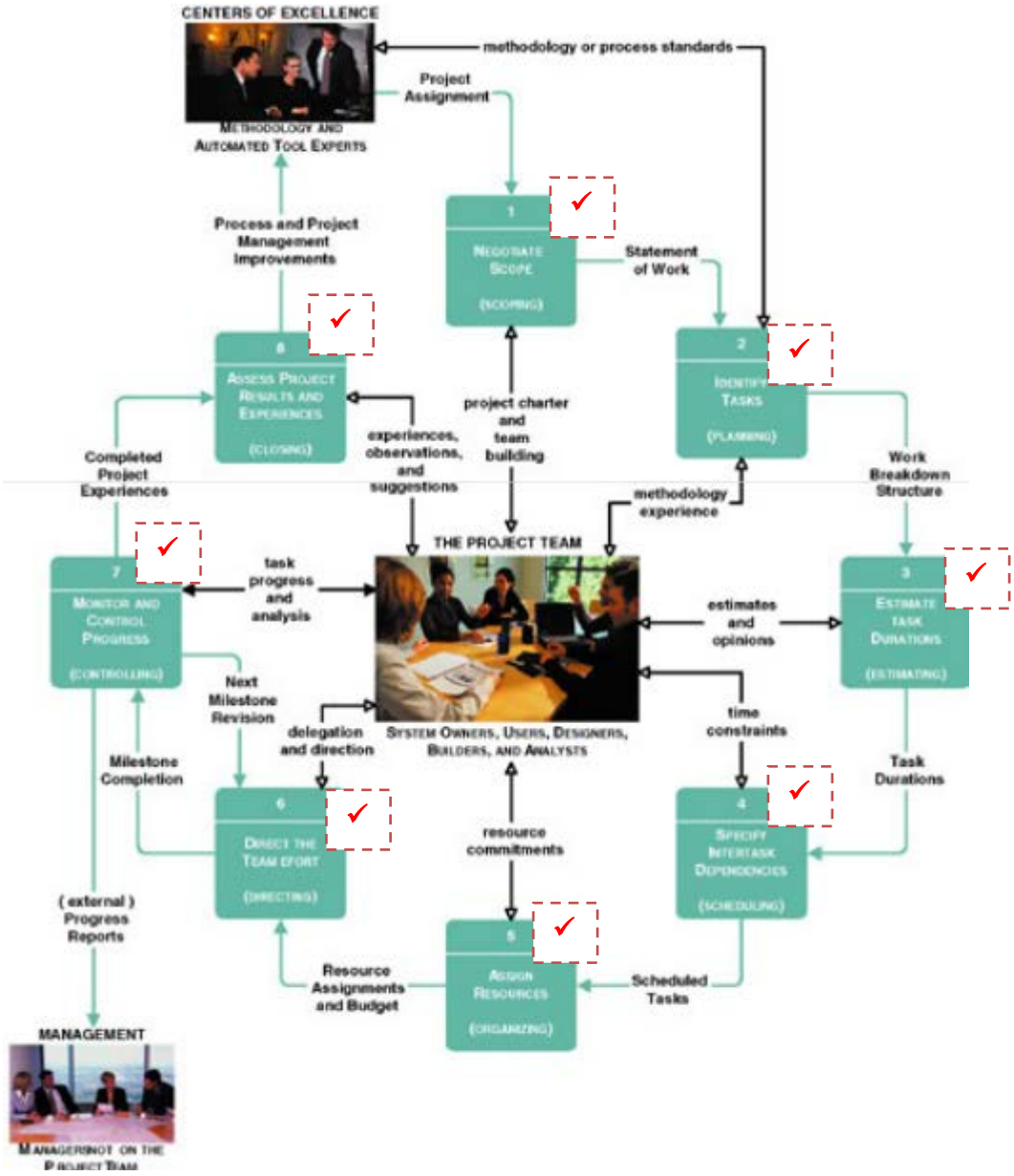
Mark allocation: See marks allocated

Question 2 | Vraag 2 [Chapter 4 | Hoofstuk 4] [10]

(2.1) Draw the **Project Management Life Cycle** with the appropriate labels.
(2.2) All users and managers have expectations regarding the project. Over time these expectations may change. This can lead to two undesirable situations: **Scope Creep** and **Feature Creep**. Explain the difference between the above mentioned undesirable situations.

8	(2.1) Teken die **Projekbestuur Lewenssiklus** met die gepaste byskrifte.
2	(2.2) Alle gebruikers en bestuurders het verwagtinge met betrekking tot die projek. Na 'n tyd kan die verwagtinginge verander. Dit kan lei tot twee ongewenste situasies: "**Scope Creep**" en "**Feature Creep**". Verduidelik die verskil tussen die bogenoemde ongewenste situasies.

Answer (2.1) See p. 129



Mark allocation: See allocated marks (✓ per correct label)

Answer (2.2) See p. 122

Scope Creep – unexpected growth ½✓ of user expectations and business requirements for an information system as the project progresses. Schedule and budget can be affected. ½✓

Feature Creep – uncontrolled addition ½✓ of technical features to a system under development without regard to schedule or budget ½✓

Mark allocation: See allocated marks

Question 3 | Vraag 3 [Chapter 6|Hoofstuk 6] [10]

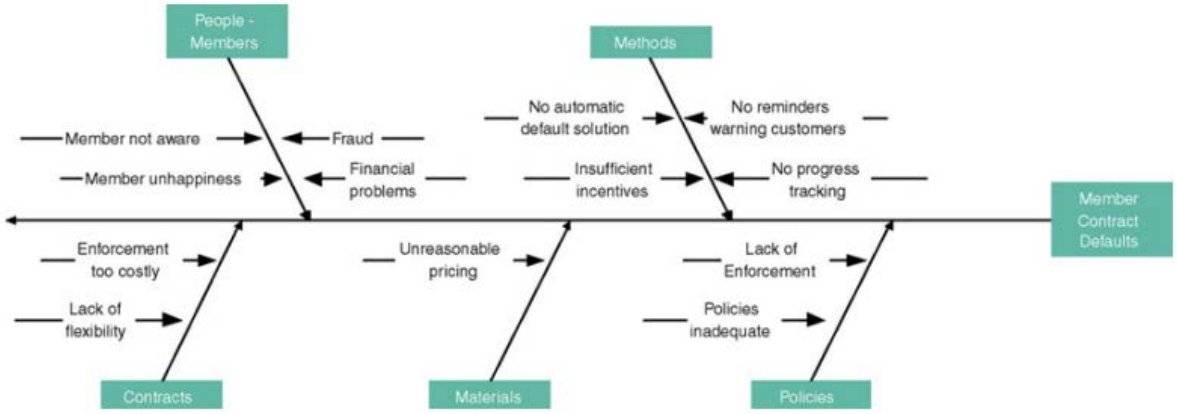
Describe a **problem** that you are currently experiencing at the university and draw a **Fishbone Diagram** representing your problem.

Beskryf n **probleem** wat jy tans by die universiteit ervaar en teken n **Visgraatdiagram** om die probleem voor te stel.

Answer See p. 211

Any problem related to the university ✓✓

Example:



Mark allocation: Bone labels ✓ each (max 4marks)

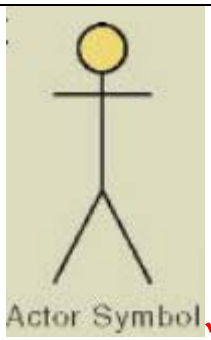
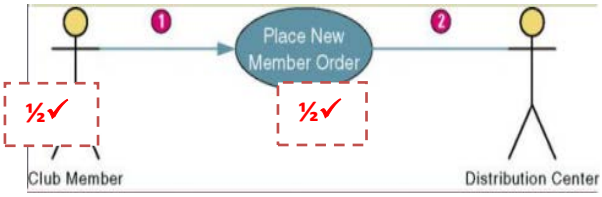
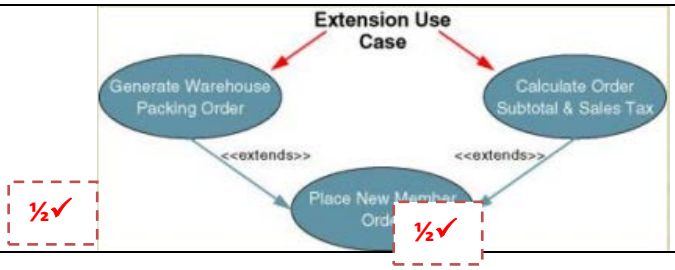
Cause & Effect ½✓ each (max 4marks)

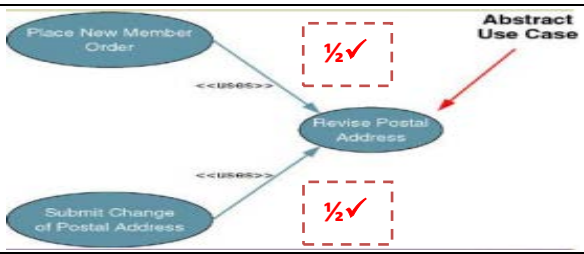
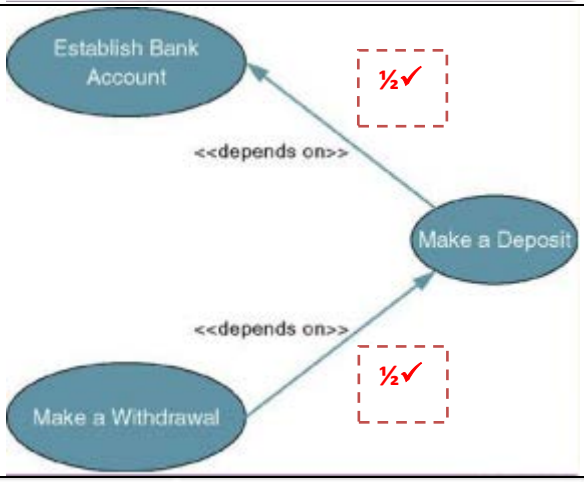
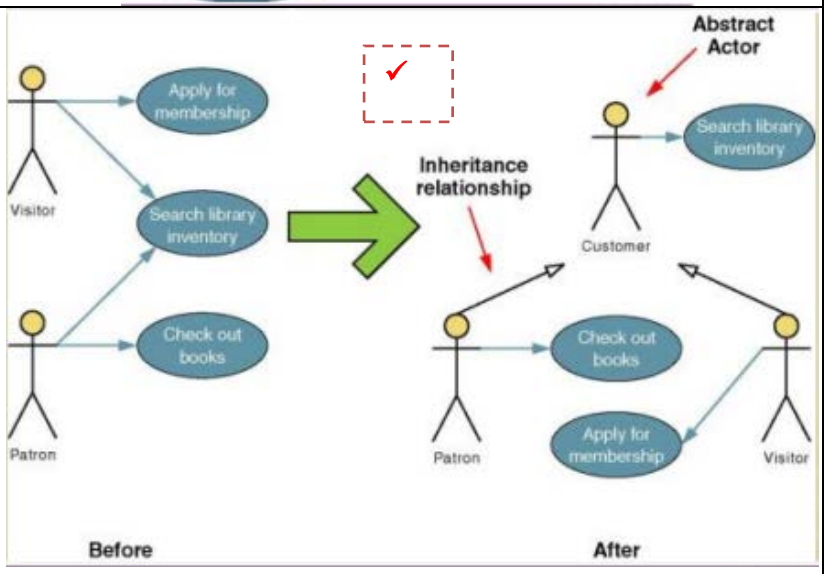
Question 4 | Vraag 4 [Chapter 7|Hoofstuk7] [15]

Give the **name**, a **definition** and an **illustration** (make use of examples from your own project) of the different components used in **Use-Case modelling**. Use a table.

Gee die **naam**, 'n **definisie** en 'n **illustrasie** (maak gebruik van voorbeelde uit jou eie projek) van die verskillende komponente wat gebruik word in **Gebruiksgeval modellering**. Gebruik 'n tabel.

Answer See p.246 - 250

Component Name	Component Description	Component Illustration
1. Use-Cases✓	Identifies and describes the system functions✓	 ✓
2. Actors✓	Initiated/ triggered by external users✓	 ✓
3. Relationships ✓	1. Association – between actor and use case when use case describes an interaction between them✓	
	2. Extends – extends functionality of original use case✓	

	3. Uses – represent a form of "reuse" tool to reduce redundancy ✓	
	4. Depends on – one use case cannot be performed until another use case has been performed✓	
	5. Inheritance – relation between actors to simplify drawing when an abstract actor inherits role of multiple real actors√	

Mark allocation: See allocated marks

Question 5 | Vraag 5 [Chapter 8|Hoofstuk8] [10]

Study the following **case study** before you answer the questions:

Bestudeer die volgende gevallestudie voordat jy die vrae beantwoord:

At the NWU, we need to store data about each student, for instance; name, course enrolled, subjects passed and enrolled. Addresses (with contact numbers) are stored to be able to get hold of a student, send results and to bill a student (although billing is not included in THIS system). The system also keeps track of a student's results to be able to calculate an average at the end of the course. This determines whether a student passed with a distinction. Some subjects weigh more towards the average, some do not count towards the average

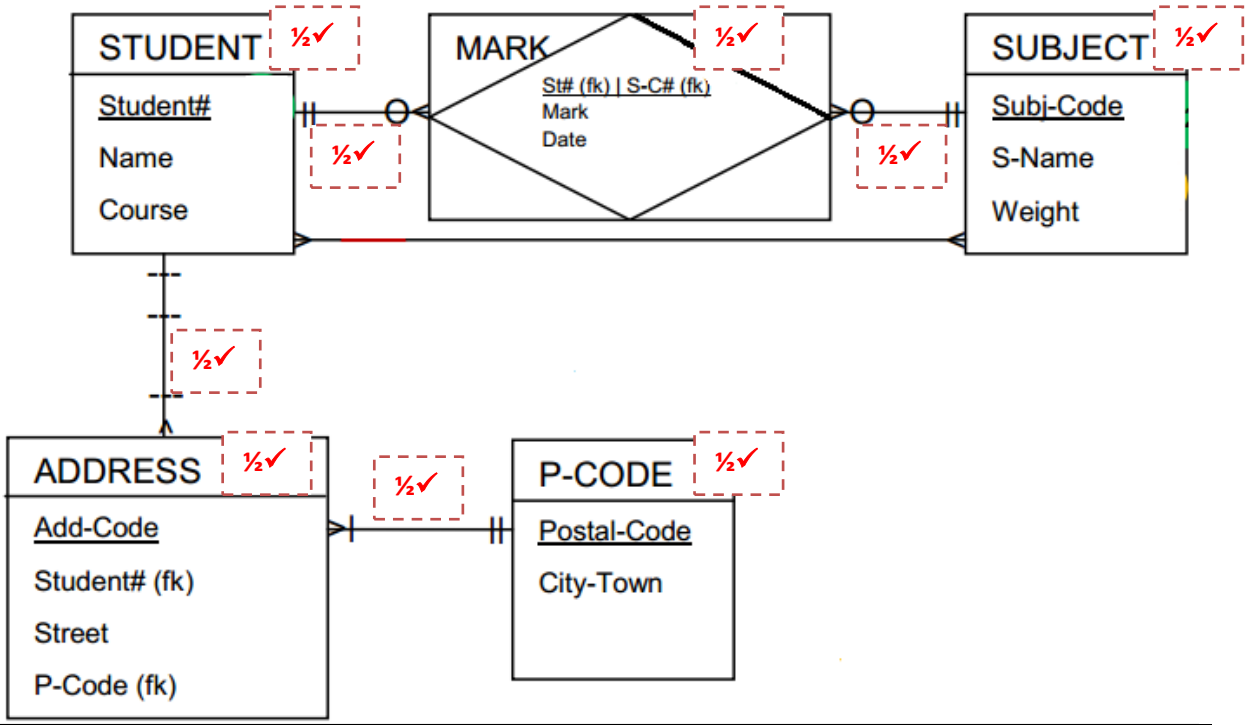
(5.1) List the **steps** to draw a detailed **ERD**.	**2**	Lys die **stappe** wat gevolg moet word om 'n gedetialleerde **EVD** te teken.
(5.2) **Apply** the steps to the case study.	**5**	**Pas** die stappe op die gevallestudie **toe**.
(5.3) List and explain the **three normal forms** that you studied.	**3**	Lys en verduidelik die **drie normaalvormdefinies** wat jy bestudeer het.

Answer(5.1) See p. 288 - 298

1. Context Data Model ½✓
2. Key Based Data Model ½✓
3. Fully Attributed Data Model ½✓
4. Normalized Data Model ½✓

Mark allocation: See allocated marks

Answer (5.2) See p. 296 - 297



Mark allocation: ½✓ for each correct entity and relationship ½✓ overall

Answer (5.3) See p. 299 - 306

1NF – an entity who's attributes have no more than one value for a single instance of that entity✓
2NF – entity whose non-primary key attributes are dependent on full primary key✓
3NF – entity whose non-primary key attributes are not dependent on any non-primary key attribute✓

Mark allocation: See allocated marks