

#### MANICALAND STATE UNIVERSITY OF APPLIED SCIENCES

FACULTY OF APPLIED SCIENCES AND TECHNOLOGY

**Information Systems Department**

**SYSTEMS ANALYSIS AND DESIGN**

**CODE: BSCIS121**

### SESSIONAL EXAMINATIONS

**MAY-JUNE 2019**

**DURATION: 3 HOURS**

**EXAMINER: MR P.T. DENHERE**

## INSTRUCTIONS

1. *Answer* ***ALL*** *sections in this paper*
2. *Paper consists of* ***SECTIONS A & B***
3. *Total number of marks is 100*

**SECTION A**

**ANSWER ALL QUESTIONS IN THIS SECTION**

**Question 1**

Explain what you understand by the following terms giving examples of tools and approaches used in each concept:

1. Information System
2. Agile Development
3. Object Oriented
4. Systems Initiation
5. Systems Analysis
6. Systems Design
7. Systems Implementation
8. Systems Maintenance [40] [5 marks each]

**SECTION B**

**ANSWER ANY TWO QUESTIONS FROM THIS SECTION**

Each question in this section carries 25 marks

**Question 2**

1. Distinguish between a level 1 DFD from level DFD with a clear example from an organisation of your choice. [20]
2. What is meant by Balances DFDs? [5]

**Question 3**

Bus Garage Repairs case scenario is as follows:

Buses come to a garage for repairs. A mechanic and helper perform the repair, record the reason for the repair and record the total cost of all parts used on a Shop Repair Order. Information on labor, parts and repair outcome is used for billing by the Accounting Department, parts monitoring by the inventory management computer system and a performance review by the supervisor.

***External Entities*:** Bus, Mechanic, Helper, Supervisor, Inventory Management System, Accounting Department, etc.

***Key process:*** (“the system”): performing repairs and storing information related to repairs

***Processes*:**

* Record Bus ID and reason for repair
* Determine parts needed
* Perform repair
* Calculate parts extended and total cost
* Record labor hours, cost

***Data stores*:**

* Personnel file
* Repairs file
* Bus master list
* Parts list

***Data flows*:**

* Repair order
* Bus record
* Parts record
* Employee timecard
* Invoices

**Required:**

1. Draw the context diagram for Bus Garage Repairs. [5]
2. Draw the DFD for Bus Garage repairs. [20]

**Question 4**

Explain the following System Development Methodologies:

1. Prototyping
2. RAD
3. JAD
4. Extreme Programming
5. Waterfall [25]

**Question 5**

Analysis is the paramount procedure is successful computer based information systems development. Outline the various elements involved in Systems Analysis. [25]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***THE END**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*