

**ZIMBABWE EZEKIEL GUTI UNIVERSITY**



**FACULTY OF HEALTH, SCIENCE AND TECHNOLOGY**

**Department of Digital Technology**

**Module: CDT103 SYSTEM ANALYSIS AND DESIGN**

**Exam Duration: 3 hours**

**February-June 2019 End Examination**

**28 May 2019**

**Instructions**

- (i) Answer all questions, the mark allocation for each question is shown in square brackets.
- (ii) Number your answers accordingly.
- (iii) The total marks for the examination is 100.

## Question 1

- a) When installing a system, you have choices of methods. Under what circumstances or situations would you consider a pilot method to be preferred over a parallel method?  
Describe **two** circumstances or situations. [4]
- b) Explain the difference between functional and non-functional requirements [4]
- c) For each of the following non-functional requirements, describe **two** aspects or features of the system's architecture that would be necessary in order to fulfill that requirement. [4]
- d) When System analyses investigate the current system why do they need to carry out a fact finding exercise [4]
- e) The hardest task for the system analyst is getting the facts that he/she needs to know from the current users. describes the problems that he /she might face [4]

## Question 2

- a) Differentiate between validation and verification [2]
- b) Name **three** items of information in addition to the name of the use case. [3]
- c) Draw a use case diagram that models the following small system. Refine your use case to show at least one <<extend>> and at least one <<include>> relationship.

John is an enthusiastic gardener who earns money by doing gardening work for his neighbors. John buys the materials (fertilizer, mulch, etc.) that he needs, and charges his customers for both labor and materials some customers make appointments when they want work done and pay when John completes the work some customers set up a schedule (usually weekly) for regular work and pay when John sends them a monthly invoice for work done during the month [15]

## Question 3

- a) Describe any **three** methods of training users that the systems analyst can use. Include advantages and disadvantages for each. [12]
- b) When choosing what project to undertake next, you identify, classify and rank the projects before making the selection. Give **two** different considerations other than urgency and feasibility. [4]

- c) Explain the purpose of a feasibility report, and when in the system development life cycle it should be produced. [6]

**Question 4**

- a) Prototyping may be useful during the analysis and design phases if users are involved in the evolution of the prototype.
- i. Define the term prototyping. [2]
  - ii. Outline any two disadvantages of prototyping. [2]
  - iii. Give any four advantages of prototyping. [4]
- b) Give any four validation checks that can be carried out by the student registration system. [4]
- c) Differentiate efficiency and effectiveness in terms of system performance [4]
- d) Explain Agile methods with an example [4]

**Question 5**

Compu-Fix is a computer repair company operating out of a small workshop. The owner, Lee, is the only person working in the company, but he hopes to expand and employ one or two other engineers in the near future. At present Lee holds much of the information about repair jobs in a filing cabinet but this is rather disorganised. He realises that a computer system would be a better method especially as any new members of staff would also need access to this information. When a customer brings in a faulty computer Lee logs the fault and the customer's details giving him/her an estimated date for the repair to be completed. Every day he checks the list of repairs and selects the jobs to be done that day. If he finds he doesn't have the required parts in stock for a repair he places a purchase order with his supplier and reschedules the job to a later date. When a repair is complete and the customer comes to collect the computer, Lee gives them an invoice and the customer pays immediately.

Once a week Lee checks his stock, and orders any parts that are getting low from his supplier.

Produce a top level data flow diagram of the Compu-Fix company. [20]

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