



PAN AFRICA CHRISTIAN UNIVERSITY

DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY

END OF SEMESTER EXAMINATION APRIL 2019

DEPARTMENT: COMPUTING & INFORMATION TECHNOLOGY

COURSE CODE: DICT0123

CAMPUS: ROYSAMBU

COURSE TITLE: SYSTEMS ANALYSIS AND DESIGN

EXAM DATE: WEDNESDAY, 10TH APRIL 2019)

TIME: 09:00 HRS-12:00HRS

INSTRUCTIONS

- This exam script has **TWO (2)** sections.
- Read all questions carefully before attempting.
- Answer All questions in Section **A** and any other Four questions in Section **B**.
- Write only your **student number** on the answer booklet provided.
- None programmable calculators permitted
- Calculators on phones, tablets and computers are NOT permitted in Theory Papers

SECTION A: (Answer ALL questions in this section)

- a) Briefly explain THREE reasons why Organization should develop a new Information System.

(6 Marks)

- b) Distinguish Systems Analysis from Systems Design **(4 Marks)**
- c) Feasibility study can be defined as Using feasibility study to determine whether the solution is feasible, or achievable given the organization's resources and constraints
- i) Explain Cost-Benefit analysis and the steps to developing it **(6 Marks)**
- ii) Explain THREE different types of feasibility studies **(9 Marks)**
- d) Explain **requirements gathering techniques** as used in systems analysis and design **(2 Marks)**
- e) Describe **prototyping** as a method of systems development **(5 Marks)**
- f) Identify and clearly explain, giving examples **FOUR** types of Information Systems that a systems analyst may be called upon to Analyze and Develop **(8 Marks)**

SECTION B: (Answer any FOUR (4) questions in this section)

Question 2

- a) Identify any THREE methods that can be used to switch from the old system to the new system. **(6 Marks)**
- b) Discuss the generic stages of a structured systems development life cycle **(9Mks)**

Question 3:

Read the following narrative and answer the questions that follow:

The Easy Driving School has several offices in the main cities of Kenya. The following are the data requirements of the school. Each office has a manager (Who tends to be the senior instructor), several senior instructors, and administrative staff. The manager is responsible for the day to day running of the office. Clients must register at an office and this requires that they complete an application form, which records the personal details. Before the first lesson, a client is requested to attend an interview with an instructor to assess the needs of the client and to ensure that the client holds a valid provisional driving license. A client is free to ask for a particular instructor or to request

that an instructor be changed at any stage throughout the process of learning how to drive. After the interview, the first lesson is booked. A Client may request individual lessons or book a block of lessons for a reduced fee. An individual lesson is for one hour, which begins and ends in the office. A lesson with a particular instructor records the progress made by the client and notes the mileage used during the lesson. The school has a pool of cars, which are adapted for the purpose of teaching. Each instructor is allocated a particular car. As well as teaching, the instructors are free to use the cars for personal use. The cars are inspected at regular intervals for faults. Once ready, a client applies for a driving test date. To obtain full driving license, the client must pass both the practical and theoretical parts of the test. It is the responsibility of the instructor to ensure the client is well prepared for all parts of the test. The instructor is not responsible for the testing of the client and is not in the car during the test but should be available to drop off and pick the client before and after the test at the Testing Centre. If a client fails to pass, the instructor must record the reasons for failure.

Use the case to answer the following: -

- i. List all the possible KEY entities
- ii. Design clearly labelled diagram to do an ERD

(5 Marks)

(10 Marks)

Question 4:

- a. With examples, contrast functional and non-functional requirements. **(6 Marks)**
- b. Explain the following terms as used in Data Flow Diagram **(9 Marks)**
 - i. External Entity
 - ii. Data Store
 - iii. Process

Questions 5

- a. Give any **THREE** skills required of a systems analyst. **(3 Marks)**
- b. Describe the SIX classifications of stakeholders in the systems game. **(12 Marks)**

Question 6

Describe any FIVE requirements gathering techniques explaining for each when it is suitable to use.

(15 Marks)

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Question 7

Describe any THREE models used for systems development

(15 Marks)