

**PAN AFRICA CHRISTIAN UNIVERSITY  
EXAMINATIONS PAPER**



**PAN AFRICA CHRISTIAN UNIVERSITY**

**DIPLOMA OF BUSINESS INFORMATION TECHNOLOGY**

**END OF SEMESTER EXAMINATION**

**DEPARTMENT:                COMPUTING AND INFORMATION TECHNOLOGY**

**COURSE CODE:             DICT 0123**

**COURSE TITLE:    SYSTEMS ANALYSIS AND DESIGN**

**EXAM DATE:                DECEMBER, 2020**

**INSTRUCTIONS**

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

**SECTION A**

**(Answer ALL questions in this section)**

**QUESTION ONE**

Consider the following extra information about the ABC Coaches system described above: "There are two types of coach drivers: full time drivers and part time drivers. The following data should be stored about each full time driver: Driver name, Date of birth, Contact details, Salary. The attributes of each part time driver are: Driver name, Date of birth, Contact details, Hourly rate, Hours worked. All drivers are required to submit their CVs detailing their past job experience. A CV consists of a header, a number of CV lines, a driver's signature."

Explain the following relationships between classes using examples from the ABC Coaches system to illustrate your answers:

- a) Association **[5 Marks]**
- b) Aggregation or Composition **[2 Marks]**
- c) Generalization/Inheritance. The examples should show relevant fragments of a class diagram **[3 Marks]**

**SECTION B** **(Answer Any Three (3) Questions)**  
**QUESTION TWO**

- a) Using suitable data flow diagram, generate a university management system using a second level DFD that would detail the files to which the data is applied in the system and from which data is obtained to each individual process. **[5 Marks]**
- b) List two tangible benefits and two operational costs for a system. How would you determine the values that should be assigned to each item? **[5 Marks]**

**QUESTION THREE**

- a) There are many characteristics/attributes of a good software design. One of them is usability. Explain the meaning of usability and give **FIVE** examples of poor software system usability. **[5 Marks]**

- b) Suppose that you are the analyst charged with developing a new system to help senior managers make better strategic decisions. What requirements gathering techniques will you use? Describe in detail how you would apply the techniques.

**[5 Marks]**

#### **QUESTION FOUR**

- a) Two common techniques for gathering requirements are interviews and workshops. Choose ONE of these techniques and describe how an analyst would prepare for it and carry it out. Explain the kind of system and why it is.

**[4 Marks]**

- b) For the technique you have chosen in part (a) discuss its advantages and disadvantages for requirements gathering.

**[6 Marks]**

#### **QUESTION FIVE**

The following are four phases in the Systems Development Life Cycle (SDLC). For each phase identify TWO deliverables, briefly describe each of these deliverables and identify the techniques used to produce it.

- a) Requirements identification

**[5 marks]**

- b) Analysis

**[5 marks]**

#### **QUESTION SIX**

- a) Explain the purpose of a Requirements Definition and when in the system development life cycle it should be produced.

**[5 Marks]**

- b) It is important that software systems work with clean, valid data. Describe how can the User Interface be designed to help ensure that data entered by the user is valid.

**[5 Marks]**