



COLLEGE OF BUSINESS, PEACE, LEADERSHIP AND GOVERNANCE

NCIS407 – ENTERPRISE ARCHITECTURE

END OF SECOND SEMESTER EXAMINATION

AUGUST 2023

LECTURER: MR MUKHALELA

DURATION: 3 HOURS

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**INSTRUCTIONS TO CANDIDATES**

1. This paper carries 6 questions.
  2. Answer All questions from **section A (Practical using a Lab allocated computer)**, Save your answer in a folder on your desktop, its name should be your Student ID+ Course Code eg 20120234NCIS403.
  3. Answer any **2 (two)** from **section B** questions use **Exam provided Answer booklet in the section.**
  4. Each question carries 25 marks.
  5. The marks for each question are indicated in square [] brackets.
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## Section A

### Question 1

Draw class diagrams using ArgoUML to show the following classes: Automobile, headlamps, and sedan.

On the class diagram demonstrate some of the following elements often shown on such diagrams;

Class Diagram Elements

• generalization • composition • public attribute • object return type • aggregation • public operation • private attribute • exception • multiplicity • private operation • class name • visibility modifier • realization • stereotype • primitive attribute • protected operation • dependency

NB: Not all elements are to be shown on your diagram.

[25]

### Question 2.

Draw an ERD for the Solomon's Enterprise business that is now getting into the premixed concrete supply business venture in the construction industry. Include the following 8 entities for your diagram: Concrete-Type, Raw-material, Supplier, Bill of material, Order, Truck, Customer and Employee.

## Section B

### Question 3

- a. Write elaborate notes on how you are to achieve system integration task at your enterprise.[8]
- d. Prototyping is a useful development strategy, define Prototyping and demonstrate how a Through-away prototype is useful to an Enterprise Architect. [4]
- e. identify the steps involved when prototyping. [4]
- f. An organisation is considering harnessing Cloud computing (CC) for its new operational site, advise them on how they can use CC packages to leverage their operations.[8]

### Question 4

- a. You have been asked to solve the challenge of a crawling website at your company and your senior has suggested harnessing the following strategies;
  - (i) Load balancing
  - (ii) Search engine optimization



**Question 5**

Agile development has been a great choice for most enterprise architecture solutions, and some of the solutions include but not limited to the following:

- (i) Joint-Application Development
- (ii) SCRUM
- (iii) Pair Programming
- (iv) Xtreme Programming
- (v) Iterative and incremental development

**Question 6**

Quick Bites is a fast food restaurant. They use a computer to take customers' orders a computer system to deal with taking customer orders, assembling the order and then paying for it. The waiter takes their order. The waiter goes to the nearest till and keys in the order using a touch screen with icons on it showing possible food combinations. The table number is used to identify the order. In the kitchens a cook reads the order on his screen, assembles the meal on a tray, and prints a chit with the table number on it plus the details of the Order. The tray is put in the food lift and the cook presses a key to indicate that the order is ready. A large screen in the restaurant displays a list of orders that are ready, identified by table number. The waiter collects the tray from the food lift and takes it to the customer. He also removes the order from the large order screen. When customers have finished their meal the waiter keys the table number into the system and the bill is printed. The waiter takes the customer payment and records the bill as paid.

**Required:** Draw a use case diagram of this system. Include some extend and include relationships in your diagram. [25]

**End of Examination.**