



***"Investing in Africa's Future"***

**COLLEGE OF ENGINEERING AND APPLIED SCIENCES**

**NCIS 213 COMPUTERS AND MODERN SOCIETY**

**END OF SECOND SEMESTER EXAMINATION**

**APRIL 2024**

**LECTURER: Ms. B GAVAZA**

**DURATION: 3 HOURS**

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### ***INSTRUCTIONS***

Answer **ALL** the questions in **Section A** and any Two questions from Section B . Total possible mark is **100**.

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Start **each** question on a new page on your answer sheet.

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The marks allocated to **each** question are shown at the end of the section.



## Section A : 40 marks

This section comprises 2 questions. Answer **all** questions.

### Question 1

Trace the evolution of computers from their inception to the present day, highlighting key technological developments. Explore the societal attitudes associated with each major phase of computer evolution. Provide insights into how these attitudes have shaped perceptions, influenced cultural norms, and contributed to the integration of computers into various aspects of daily life. Consider factors such as accessibility, fears or concerns, and the impact on industries and professions. Support your response with specific examples and consider the implications of evolving attitudes toward computers for the future. [25]

### Question 2

Ethical decision making plays a crucial role in decision making processes. Software engineers must weigh competing values and principles to arrive at morally sound choices. As a software engineering intern, you discover a security vulnerability in the company's application that could potentially compromise user data. Your team is on a tight deadline to release a new feature, and fixing the vulnerability would delay the release. Your manager insists on keeping it quiet and proceeding with the launch. What ethical decision would you make and why? [15]

## Section B : 60 marks

This section comprises 3 questions. Answer **any 2** questions.

### Question 3

- a. The establishment of ethical codes of conduct in any industry, including software engineering, serves several crucial purposes. Outline the different purposes of these codes of ethics. [15]
- b. In the field of software engineering, several codes of ethics and professional conduct apply. One prominent example is the "ACM Code of Ethics and Professional Conduct" published by the Association for Computing Machinery (ACM). Outline the key principles highlighted in the ACM Code of Ethics. [15]



#### Question 4

- a. State and explain 3 ethical theories clearly highlighting the principle, focus, key concepts and giving an example related to the field of software engineering.

[15]

- b. As part of a machine learning project, you notice that the training data contains biases that might lead to unfair outcomes, particularly impacting certain demographic groups negatively. The team is under pressure to deploy the model quickly. As a Software Engineer, what measure can you take to mitigate these challenges?

[15]

#### Question 5

Digital Treasures, an e-commerce platform specializing in digital products, is facing a lawsuit from customers who claim that their personal information was mishandled. As a legal and ethical consultant, you are tasked with assessing the situation and providing guidance to Digital Treasures.

- a. Analyze the ethical considerations surrounding the collection, storage, and use of customer data. Address the potential consequences, both legal and reputational, that Digital Treasures might face if the allegations are substantiated.

[10]

- b. Give recommendations on how Digital Treasures can rectify its data practices to align with legal requirements and ethical standards.

[10]

- c. Discuss the significance of transparency, informed consent, and data security in maintaining ethical integrity and customer trust.

[10]

**END OF EXAMINATION**