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KIRIRI WOMEN'S UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2024/2025 ACADEMIC YEAR
SECOND YEAR, SECOND SEMESTER EXAMINATION
FOR THE BACHELOR OF SCIENCE
(BUSINESS ADMINISTRATION)

KCS 001 – COMPUTING PROFESSIONAL ETHICS

Date: 18th April 2024
Time: 11:30am – 1:30pm

INSTRUCTIONS TO CANDIDATES
ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE (30 MARKS)

a) A social media platform is implementing personalized recommendation algorithms to curate users' news feeds based on their interests and behavior.

Using three relevant examples, discuss the ethical implications of using algorithmic interaction systems to influence user behavior and shape online experiences. (6 Marks)

b) A wearable fitness tracker collects biometric data such as heart rate, sleep patterns, and activity levels to provide personalized health insights to users.

Discuss three privacy implications of storing and analyzing sensitive user data in interactive systems and recommend strategies to mitigate risks. (6 Marks)

c) A multinational corporation is faced with a dilemma. The company is considering outsourcing its manufacturing operations to a developing country where labor costs are significantly lower. However, investigations reveal that the working conditions in these facilities are substandard, and labor laws are frequently violated.

Using two relevant examples, discuss how the company can weigh the financial benefits of outsourcing against the ethical standards considerations of supporting exploitative labor practices. (4 Marks)

d) A healthcare organization is implementing AI-driven predictive analytics tools to analyze patient data and identify individuals at risk of developing chronic health conditions. The AI system collects and analyzes sensitive personal information, including medical histories, genetic data, and lifestyle habits, to generate predictive models.

   i) Using three relevant examples, describe ethical implications of collecting and analyzing sensitive patient data using AI technologies? (6 Marks)

   ii) Using two examples explain how the healthcare organization can balance the benefits of predictive analytics with the privacy rights and confidentiality of patients? (4 Marks)

   iii) Using two examples, explain how the organization can promote transparency and accountability in its use of AI technologies to address privacy concerns among patients and stakeholders? (4 Marks)

QUESTION TWO (20 MARKS)

a)   Bahari Software Solutions is a renowned software development firm. The company recently launched a new application that has gained significant popularity. However, one of the developers, who was involved in the project, claims that the core algorithm used in the application was his original creation and he holds the copyright for it.

   i)   Using two relevant examples, discuss how Bahari Software Solutions should address this situation while considering intellectual property rights?   (4 Marks)

   ii)   Discuss three advantages of patenting original artistic work.   (6 Marks)

b)   Mercy Hospital recently implemented a new Hospital Information System (HIS) to streamline patient records and improve overall efficiency. However, some healthcare providers are concerned about the privacy and security of patient data within the system.

   i)   Using three examples, discuss the ethical considerations surrounding the implementation of HIS in-healthcare settings.   (6 Marks)

   ii)   Using two examples, explain measures that can be carried out to ensure patient data confidentiality and integrity .   (4 Marks)

QUESTION THREE (20   MARKS)

a)   GlobalTech Automotive is developing an Autonomous Driving System for its fleet of vehicles. While the system promises to enhance road safety and reduce traffic congestion, there are concerns about the ethical dilemmas related to decision-making algorithms in critical situations.

   i)   Examine three ethical considerations surrounding the deployment of autonomous driving systems.   (6 Marks)

   ii)   Using two examples discuss principles that can be applied to ensure ethical behavior and accountability in self-driving vehicles.   (4 Marks)

b)   A multinational corporation has decided to migrate its data storage and processing operations to a cloud service provider to reduce costs and improve scalability. However, concerns arise regarding the privacy and security of sensitive customer data stored in the cloud. Using two examples discuss the ethical considerations the organization should address when transitioning to cloud computing.

                                                                                      (4 Marks)

c)   A cybersecurity firm discovers a critical security vulnerability in a widely used software system. The firm faces a dilemma: publicly disclosing the vulnerability could potentially expose millions of users to cyberattacks, while keeping it private might raise ethical concerns about transparency and user safety. Using three examples, discuss the ethical considerations involved in deciding whether to disclose the vulnerability to the software vendor and the public.

                                                                                      (6 Marks)

QUESTION FOUR (20 MARKS)

a)   Baraka Designs is a creative agency known for its innovative branding and design solutions. One of their designers, who recently left the company, has started a new venture using some of the design concepts they worked on during their time at Baraka Designs.

   i)   Using two relevant examples, explain if Baraka Designs can take legal action against the former employee for using their intellectual property in the new venture?

                                                                                      (4 Marks)

   ii)   Using three relevant examples, explain the steps that Baraka should Designs take to protect their intellectual property in the future?   (6 Marks)

b)   A financial institution implements an AI-driven system for automated loan approval. However, an audit reveals that the AI algorithm systematically denies loans to applicants from certain demographic groups, leading to accusations of discrimination and bias. Using three relevant examples, describe how the organization should address the ethical implications of algorithmic bias in AI-driven decision-making processes, especially in sensitive areas such as financial services?   (6 Marks)

c)   A marketing company collects vast amounts of personal data from social media platforms and online transactions to create targeted advertising campaigns. While this data helps improve marketing effectiveness, it raises concerns about consumer privacy and data protection.
Using 2 relevant examples, discuss the ethical responsibilities of organizations that engage in data analytics, particularly regarding the collection, storage, and use of personal data for commercial purposes.   (4 Marks)

QUESTION FIVE (20 MARKS)

a)   Mengo school is facing budget cuts and is considering laying off teachers to balance its budget. However, the school has recently received a substantial donation from a local philanthropist to fund extracurricular programs.

   i)   Using two relevant examples, explain the ethical implications of prioritizing extracurricular programs over maintaining adequate staffing levels.
                                                                                    (4 Marks)

   ii)   Using three examples explain the importance of having a code of ethics in Mengo school.
                                                                                    (6 Marks)

b)   Waridi Manufacturing Company has developed a unique manufacturing process that significantly reduces production costs while maintaining product quality. However, they have not patented the process. A competitor has started using a similar process, and they suspect that they might have obtained the information through industrial espionage.

   i)   Using two relevant examples, discuss how industrial espionage works in an organization.
                                                                                    (4 Marks)

   ii)   Discuss any three legal actions that Waridi Manufacturing Company can take in order to protect their intellectual property rights and address the competitor's actions?
                                                                                    (6 Marks)