



UNIVERSITY EXAMINATIONS

SECOND SEMESTER 2023/2024 ACADEMIC YEAR

**FOURTH YEAR EXAMINATION FOR THE DEGREE OF
BACHELOR OF COMPUTER SCIENCE AND ICT**

**COMP 423/BICT 422: LEGAL AND ETHICAL ISSUES/
PROFESSIONAL ETHICS AND INFORMATION LAW**

STREAM: R

TIME: 2 HRS

DAY: TUESDAY[2.30 – 4.30 P.M]

DATE: 16/04/2024

THIS QUESTION PAPER CONSISTS OF FIVE (5) PAGES

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INSTRUCTIONS: Answer Question 1 and any TWO other questions Question 1 (Compulsory) (30 Marks)

QUESTION ONE (30 MARKS)

1. Explain the difference between ethics and law in computer ethics. Provide an example of a legal act that may be considered unethical in IT. **(3 marks)**
2. Discuss the ethical implications of using an algorithm that personalizes content based on user behavior. How might this create “echo chambers” or “filter bubbles”? **(3 marks)**
3. Imagine you discovered a security vulnerability in a popular software application. What would be the ethical course of action? Discuss this in the context of hacker ethics. **(3 marks)**
4. As an IT professional, how would you handle a situation where your employer asks you to do something that goes against your professional code of ethics? **(2 marks)**
5. Discuss an example of a privacy concern that is unique to the internet. How would you propose to mitigate this concern? **(2 marks)**
6. Is software patentable? Discuss your answer regarding current legal protections and the philosophical basis of the property. **(2 marks)**
7. Discuss the sources of press and freedom of information laws in Kenya. How do these laws impact the IT industry? **(2 marks)**
8. Choose one principle from the ACM or IEEE Software Engineering Code of Ethics and Professional Practice. Discuss a scenario where this principle might guide an IT professional’s decision. **(3 marks)**
9. What is a trademark? Discuss an example of trademark infringement in the digital world. **(2 marks)**
10. Discuss the ethical implications of anonymity on the internet. Provide an example where this could lead to moral dilemmas. **(2 marks)**
11. Discuss a potential conflict of interest in a professional-client relationship in the IT industry. How would you resolve it? **(3 marks)**
12. Discuss the problems with linking and metatags in the context of copyright



infringement.

(3 marks)

QUESTION TWO (20 MARKS)

You are a software developer at a tech company. You have been working on a new feature for the company’s main product. However, you realize that implementing this feature could potentially compromise the users' privacy.

1. Discuss the ethical implications of implementing a feature that could compromise User privacy. (2 marks)
2. What is the importance of user privacy n software development? (2 marks)
3. How would you handle the situation if your employer insists on implementing the Feature despite your concerns? (2 marks)
4. What potential consequences could befortheusersiftheirprivacyiscompromised? (2 marks)
5. Discuss the difference between legal and ethical responsibilities in this context. (2 marks)
6. How would you communicate your concerns about this situation to you employer? (2 marks)
7. How could you address this situation while maintaining your professional Responsibilities and relationships? (2 marks)
8. Discuss the role of professional organizations like ACM and IEEE in guiding IT Professionals in such ethical dilemmas. (2 marks)
9. How can adherence to a professional code of ethics prevent such situations? (2 marks)
10. What potential conflicts of interest exist in this situation, and how would you resolve them? (2 marks)

QUESTION THREE (20 MARKS)

You are a software developer who has created a unique algorithm that significantly improves data processing efficiency. You are considering whether to patent, licence, or keep this algorithm a trade secret.

1. Discuss the advantages and disadvantages of patenting your algorithm. (3 marks)



2. What is the difference between a patent and a copyright? Which would be more appropriate for your algorithm? (2 marks)
3. What key considerations should you consider if you decide to license your algorithm? (3marks)
4. Discuss the ethical implications of keeping your algorithm as a trade secret. (1 mark)
5. How does the concept of intellectual property apply in this situation? (2 marks)
6. What potential consequences could be if someone else infringes on your property rights? (3 marks)
7. How would you protect your property rights in the digital world? (3 marks)
8. Discuss the role of legal protections in safeguarding property rights in computer software. (3 marks)

QUESTION FOUR (20 MARKS)

You are an IT professional working for a government agency in Kenya. Your department is responsible for maintaining the security of the agency’s digital infrastructure. Recently, you’ve noticed an unusual amount of traffic coming from an unknown source, which could potentially be a cyber attack.

1. Discuss the ethical implications of a potential cyber attack on a government agency. (3 marks)
2. What steps would you take to investigate this unusual traffic? (3 marks)
3. Explain what a DDoS attack is and how it can disrupt services.? (3 marks)
4. What could be the potential consequences for the agency and the public if the agency’s digital infrastructure is compromised? (3 marks)
5. What measures could be implemented to prevent such cyber attacks in the future (3 marks)
6. Discuss the potential motivations behind such a data breach. (2 marks)
7. How would you mitigate the effects of this data breach and prevent them from happening in the future? (3 marks)



QUESTION FIVE (20 MARKS)

You are an IT project manager for a healthcare company in Kenya. The company has recently implemented a new patient record management system. However, there have been several instances where incorrect patient data was entered into the system due to user error, leading to potential risks in patientcare.

- a. Discuss the concept of accountability in the context of information technology. How does it apply in this situation? **(3 marks)**
- b. How would you ensure accountability in the data entry process or the patient record management system? **(3 marks)**
- c. Discuss the role of quality assurance in preventing such errors. **(2 marks)**
- d. How would you handle a situation where an employee consistently makes errors in data entry despite training and guidance? **(3 marks)**
- e. What are the potential legal implications for the company and the employee responsible for them is takes? **(2 marks)**
- f. Discuss the importance of data integrity in a health care setting. **(2 marks)**
- g. How would you modify the user interface of the patient record management system to minimize the chances of user error? **(3 marks)**
- h. Discuss the role of continuous monitoring and auditing in maintaining data

