



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

Faculty of Computing & Informatics

Informatics Department

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COURSE: Ethics for computing	COURSE CODE: EFC621S
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FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
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THIS QUESTION PAPER CONSISTS OF 8 PAGES

(Including this front page)

Instructions for the candidate

1. Answer **ALL** questions. Write as many details as possible. Unanswered questions receive ZERO marks.
2. Organise your work. Work scattered all over the page without clear ordering might receive little credit.
3. This is a closed-book exam.
4. Please ensure that your writing is **legible, neat and presentable**.

Section A: Multiple Choice Questions (30 Marks)

Select the most appropriate answer for each question. Each question carries 1 mark.

1. Which ethical theory emphasises the greatest good for the greatest number?
 - A) Deontology
 - B) Utilitarianism
 - C) Virtue Ethics
 - D) Relativism
2. What does IP stand for in the context of intellectual property?
 - A) Internet Protocol
 - B) Intellectual Property
 - C) Internal Process
 - D) Information Privacy
3. Which law primarily deals with software piracy?
 - A) GDPR
 - B) DMCA
 - C) HIPAA
 - D) FERPA
4. The digital divide refers to:
 - A) The gap between software and hardware development
 - B) The disparity in access to technology among different populations
 - C) The separation between online and offline activities
 - D) The difference between various programming languages
5. Whistle-blowing in a professional context refers to:
 - A) Promoting company products
 - B) Reporting unethical or illegal activities within an organisation
 - C) Enhancing team communication
 - D) Increasing workplace efficiency
6. Which of the following is a form of cyberbullying?
 - A) Email phishing

- B) Online harassment through social media
 - C) Software debugging
 - D) Data encryption
7. Virtual Reality (VR) poses ethical challenges primarily related to:
- A) Hardware malfunctions
 - B) User privacy and psychological effects
 - C) Network latency
 - D) Software licensing
8. Which of the following is NOT a type of intellectual property?
- A) Trademark
 - B) Patent
 - C) Copyright
 - D) Liability
9. Employee monitoring in the workplace raises concerns about:
- A) Productivity
 - B) Privacy
 - C) Technology adoption
 - D) Salary structures
10. Which framework is commonly used for ethical decision-making in computing?
- A) SWOT Analysis
 - B) ACM Code of Ethics
 - C) Agile Methodology
 - D) Lean Six Sigma
11. The General Data Protection Regulation (GDPR) is primarily concerned with:
- A) Software licensing
 - B) Data privacy and protection
 - C) Network security
 - D) Intellectual property rights

12. Which of the following is an example of a software liability?

- A) High licensing fees
- B) Software causing financial loss due to bugs
- C) User interface design
- D) Open-source licensing

13. Telecommuting can lead to:

- A) Increased workplace harassment
- B) Enhanced work-life balance
- C) Reduced need for cybersecurity
- D) Decreased productivity

14. In the context of AI ethics, "bias" refers to:

- A) The preference for certain algorithms
- B) Prejudiced outcomes based on flawed data
- C) Hardware limitations
- D) Software inefficiency

15. Which of the following best describes a trademark?

- A) A government-issued software license
- B) A symbol legally registered to represent a company or product
- C) An idea protected by copyright
- D) A patent for a new invention

16. Cybercrime includes all EXCEPT:

- A) Hacking
- B) Identity theft
- C) Physical theft of hardware
- D) Online fraud

17. The purpose of professional codes of conduct is to:

- A) Increase company profits
- B) Establish ethical standards for professionals
- C) Define technical specifications
- D) Regulate software pricing

18. Which ethical theory focuses on the inherent rightness or wrongness of actions?

- A) Utilitarianism
- B) Deontology
- C) Pragmatism
- D) Existentialism

19. Software risk assessment involves:

- A) Increasing software features
- B) Identifying and mitigating potential software failures
- C) Marketing software products
- D) Designing user interfaces

20. Which of the following is a strategy to prevent cyberbullying?

- A) Increasing software complexity
- B) Implementing strict online policies and education
- C) Reducing internet access
- D) Encouraging anonymous interactions

21. Intellectual property rights protect:

- A) Physical assets
- B) Ideas and creations of the mind
- C) Natural resources
- D) Government policies

22. The relationship between law and morality is best described as:

- A) They are identical
- B) Law is a subset of morality
- C) Morality influences law, but they are not the same
- D) They are completely unrelated

23. In mobile ecosystems, security issues primarily concern:

- A) Battery life
- B) App permissions and data protection
- C) Screen resolution
- D) Hardware compatibility

24. Which of the following is an example of a trade secret?

- A) A company's logo
- B) The formula for Coca-Cola
- C) A published research paper
- D) A patented invention

25. Analysing the societal impacts of computing includes studying:

- A) Hardware specifications
- B) The digital divide and workplace transformations
- C) Software development methodologies
- D) Network protocols

26. Whistle-blowing can lead to:

- A) Increased company secrecy
- B) Exposure to unethical practices
- C) Improved software performance
- D) Reduced employee turnover

27. Privacy issues in online social networks involve:

- A) Network speed
- B) Data sharing and user consent
- C) Application development
- D) Hardware design

28. Emerging ethical challenges in cyberspace include:

- A) Hardware obsolescence
- B) Digital identity theft and online anonymity
- C) Software licensing
- D) Data storage solutions

29. A key component of ethical decision-making frameworks is:

- A) Profit maximisation
- B) Stakeholder analysis
- C) Ignoring legal constraints
- D) Technical feasibility

30. Employee monitoring technologies must balance:

- A) Cost and efficiency
- B) Productivity and privacy
- C) Software updates and hardware maintenance
- D) User experience and interface design

Section B: Short Structured Questions (40 Marks)

Answer each question concisely. Each question carries 10 marks.

1. Analyse the relationship between morality, ethics, and law in the context of computing.
2. Apply an ethical decision-making framework to resolve a dilemma where a software engineer discovers a security flaw in their company's product that could compromise user data.
3. Evaluate the societal impacts of computing, particularly focusing on the digital divide and workplace transformations such as telecommuting.

4. Explain the importance of intellectual property rights pertaining to computer technology and software development.
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Section C: Case Study (30 Marks)

Read the following case study and answer the questions that follow. Each question carries 15 marks.

Case Study: Ethics in Data Analytics

Scenario:

XYZ Analytics is a company specialising in data analytics for marketing purposes. The company has access to personal data from users across various social media platforms, including demographic details, browsing behaviour, and online purchasing history. Recently, XYZ Analytics developed a new predictive model to forecast consumer behaviour and has started selling this data to third-party advertisers without explicit consent from the users.

One of the major clients, TechMart, used this predictive model to launch targeted user advertisements. However, it was found that the model disproportionately targeted individuals from marginalised communities with certain high-interest loans. Additionally, some of the predictive outcomes led to users needing to be more profiled accurately, affecting their online experiences and opportunities.

A whistleblower within XYZ Analytics raised concerns about the ethical implications of this model. They argued that using data without explicit consent violated user privacy and that the profiling mechanisms could reinforce societal inequalities. The management responded by stating that their data usage complies with platform policies and that users implicitly agreed to such data processing when using social media platforms.

Questions:

1. Evaluate the ethical issues involved in XYZ Analytics' use of personal data in its predictive model. (15 Marks)
2. What ethical frameworks or principles could XYZ Analytics apply to mitigate the negative consequences of their actions? Provide specific strategies they could implement. (15 Marks)

End of Question Paper