NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Faculty of Computing & Informatics

Informatics Department

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SECOND OPPORTUNITY/SUPPLEMENTARY EXAMINATION QUESTION PAPER	
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THIS QUESTION PAPER CONSISTS OF 7 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 principle emphasises respecting individuals' rights to control their personal data?**

   o   A) Autonomy

   o   B) Beneficence

   o   C) Non-maleficence

   o   D) Justice

2. **What is the primary focus of the Digital Millennium Copyright Act (DMCA)?**

   o   A) Protecting user privacy

   o   B) Preventing copyright infringement online

   o   C) Regulating telecommunications

   o   D) Ensuring software interoperability

3. **Which type of intellectual property protection is suitable for a unique software algorithm?**

   o   A) Trademark

   o   B) Patent

   o   C) Copyright

   o   D) Trade Secret

4. **Which of the following best describes cyberbullying?**

   o   A) Physical intimidation in a workplace

   o   B) Harassment conducted through digital platforms

   o   C) Malware distribution

   o   D) Unauthorized access to computer systems

5. **Which ethical theory is most concerned with duties and rules?**

   o   A) Utilitarianism

   o   B) Deontology

   o   C) Virtue Ethics

   o   D) Relativism

6. **In the context of workplace privacy, employee monitoring can potentially violate:**

   o   A) Company policies

   o   B) Labor laws

   o   C) Employees' privacy rights

- o   D) Software licenses

7. **Which of the following is an example of a non-traditional procedure in computing processes?**

    - o   A) Standard software testing

    - o   B) Agile development methodologies

    - o   C) Waterfall model

    - o   D) Sequential programming

8. **The concept of 'whistle-blowing' is most closely related to:**

    - o   A) Enhancing software performance

    - o   B) Reporting unethical practices

    - o   C) Marketing strategies

    - o   D) User interface design

9. **Which area of computing ethics deals with the moral implications of human interactions in virtual spaces?**

    - o   A) Artificial Intelligence Ethics

    - o   B) Cyber Ethics

    - o   C) Virtual Reality Ethics

    - o   D) Social Computing Ethics

10. **Which of the following best describes a copyright?**

    - o   A) Protection for brand names and logos

    - o   B) Rights granted to creators for their original works

    - o   C) Exclusive rights to an invention

    - o   D) Confidential business information

11. **Artificial Intelligence (AI) ethical challenges include:**

    - o   A) Data storage limitations

    - o   B) Algorithmic bias and decision transparency

    - o   C) Hardware costs

    - o   D) Network security

12. **A trade secret must be:**

    - o   A) Patented

    - o   B) Publicly disclosed

    - o   C) Kept confidential

o   D) Trademarked

13. **Which of the following is a common prevention strategy for cybercrime?**

   o   A) Ignoring suspicious activities

   o   B) Implementing robust cybersecurity measures

   o   C) Reducing internet access

   o   D) Limiting software updates

14. **The ethical consideration of 'fairness' in AI primarily addresses:**

   o   A) Cost of implementation

   o   B) Equal treatment across different groups

   o   C) Speed of processing

   o   D) Data storage efficiency

15. **Which legal framework governs data protection in the European Union?**

   o   A) CCPA

   o   B) HIPAA

   o   C) GDPR

   o   D) SOX

16. **Which of the following is a potential societal impact of workplace telecommuting?**

   o   A) Increased urban congestion

   o   B) Reduced office space requirements

   o   C) Higher employee turnover

   o   D) Decreased internet usage

17. **Virtual Reality ethical challenges may include:**

   o   A) Hardware malfunctions

   o   B) User addiction and psychological effects

   o   C) Software licensing issues

   o   D) Network bandwidth limitations

18. **Which of the following is NOT typically considered a form of computer crime?**

   o   A) Phishing

   o   B) DDoS attacks

   o   C) Software development

   o   D) Identity theft

19. **Privacy issues in mobile ecosystems often involve:**

   o   A) Screen resolution

   o   B) App permissions and data collection

   o   C) Battery life

   o   D) Hardware design

20. **Which principle is central to the ACM Code of Ethics?**

   o   A) Maximizing profits

   o   B) Respecting privacy and confidentiality

   o   C) Enhancing software features

   o   D) Reducing development time

21. **The 'right to be forgotten' is a concept primarily associated with:**

   o   A) Software licensing

   o   B) Data privacy regulations

   o   C) Intellectual property laws

   o   D) Cybersecurity measures

22. **Which of the following best describes the term 'cyberspace'?**

   o   A) Physical computer networks

   o   B) The virtual environment of computer networks

   o   C) Hardware components of a computer

   o   D) Software applications

23. **Ethical challenges in artificial intelligence include:**

   o   A) Hardware durability

   o   B) Algorithmic transparency and accountability

   o   C) Software user interface design

   o   D) Data storage capacity

24. **Which of the following is a key aspect of employee monitoring to ensure ethical compliance?**

   o   A) Covert surveillance

   o   B) Transparency and clear policies

   o   C) Unlimited data access

   o   D) Ignoring privacy concerns

25. **What is the main purpose of intellectual property laws in computing?**

   o A) To regulate internet usage

   o B) To protect creators' rights and encourage innovation

   o C) To manage software updates

   o D) To set standards for hardware production

26. **Which of the following is an example of cyberbullying?**

   o A) Stealing hardware

   o B) Spreading false information on social media

   o C) Developing malware

   o D) Hacking into systems

27. **In the context of online social networks, 'privacy by design' means:**

   o A) Adding privacy features after product launch

   o B) Integrating privacy considerations into the design process from the start

   o C) Ignoring privacy to enhance functionality

   o D) Outsourcing privacy management

28. **Which ethical issue is associated with data breaches in software applications?**

   o A) Increased sales

   o B) Loss of user trust and privacy violations

   o C) Enhanced software performance

   o D) Improved user experience

29. **The principle of 'justice' in computing ethics refers to:**

   o A) Maximizing profits

   o B) Fair distribution of benefits and burdens

   o C) Speed of software development

   o D) Protecting intellectual property

30. **Mobile ecosystem security protocols should primarily focus on:**

   o A) Enhancing user interface

   o B) Protecting data and ensuring secure transactions

   o C) Increasing battery life

   o D) Reducing app sizes

Section B: Short Structured Questions (40 Marks)

*Answer each question concisely. Each question carries **10 marks**.*

1. Apply ethical theories to critically examine the challenges posed by artificial intelligence in decision-making processes.

2. Identify and analyse various forms of computer crime and cyberbullying, including prevention strategies.

3. Evaluate the role of professional ethics and codes of conduct in shaping responsible behaviour among computing professionals.

4. Explain the societal implications of the digital divide and propose solutions to bridge this gap.

Section C: Case Study (30 Marks)

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

Case Study:

InnovateX, a leading virtual reality (VR) technology company, has launched a new VR platform that allows users to interact in a fully immersive virtual environment. Shortly after its release, concerns were raised about the potential psychological effects of prolonged VR usage, including addiction and desensitisation to real-world interactions. Additionally, users reported instances where their personal data was accessed by third-party developers without explicit consent, raising significant privacy issues. The company faces criticism from users and regulatory bodies regarding these ethical and privacy concerns.

Questions:

1. Critically examine the emerging ethical challenges in InnovateX's VR platform, focusing on user privacy and psychological impacts.

2. Propose a set of ethical guidelines and security measures that InnovateX should implement to address these challenges and restore user trust.