

ETHC303 Major Exam Question Bank

Introduction to Ethics • Ethical Theories • Professional Ethics

Technical & Ethical Issues with SA and SD • Security Issues & Countermeasures

Compiled from past quizzes, majors, and makeup exams

★ = Past Exam Question

Chapter 1: Introduction to Ethics

Multiple Choice

1. Why must a moral system be based on principles of logical reason that are accessible to all individuals? ★

Past Exam

- A) To ensure that morality is informal.
- B) To avoid the need for public attention or review.
- C) To ensure that it is rational and does not require special knowledge.
- D) To promote moral rules that vary between privileged groups.

2. One of the following is not considered as a feature of moral systems: ★ Past Exam

- A) Public.
- B) Informal.
- C) Partial.
- D) Rational.

3. Which is NOT one of the four different characteristics of a moral system? ★ Past Exam

- a) Public
- b) Rational
- c) Informal enforcement
- d) Legal
- e) Impartial

4. Use of computers for surveillance is an example of: ★ Past Exam

- a) Invisible complex calculation
- b) Presence of invisible programming values
- c) Invisible Abuse
- d) Logical malleability of computers

5. Ethics really boils down to a cost-benefit analysis. ★ Past Exam

- a) Ethical Relativism
- b) Virtue Ethics
- c) Utilitarianism
- d) Deontology
- e) None of the above

6. Which of the following would a cultural relativist accept? ★ Past Exam

- a) Morality is determined by the guiding ideals of a society.
- b) Morality is determined by personal opinion.
- c) There is no moral trust at all.
- d) None of the above.

7. A common critique of Cultural Relativism is that it: ★ Past Exam

- A) Denies the existence of any cultural differences.
- B) Implies that no culture's practices can be morally criticized by outsiders.
- C) Promotes the idea that one culture is morally superior to others.
- D) Encourages moral and universal principles.

8. Which of the following statements aligns with Subjective Relativism? ★ Past Exam

- A) What is morally right for one person may be morally wrong for another, and both can be correct.
- B) Moral judgments should be based on the consequences of actions.
- C) There are universal moral principles that everyone must follow.

D) Moral truths depend on religious or divine commands.

9. Divine Command Theory is advantageous in a multicultural society because everyone follows one religion's moral code. (True or False — correct the statement if false) ★ Past Exam

10. Thomas Hobbes called life without rules and a means of enforcing them ★ Past Exam

a) Utopia.

c) Democracy.

e) The state of nature

b) Anarchy.

d) Communism.

Fill in the Blanks

1. Ethics is the philosophical study of _____, a rational examination into people's moral belief and behaviour. ★ Past Exam

2. A perfect duty includes helping others in need whenever possible. (True/False) ★ Past Exam

3. Right to Privacy is a negative right. (True/False) ★ Past Exam

Essay / Scenario Question

Scenario: *The Dark Knight*

In the movie The Dark Knight, Batman, who represents order, justice, and moral integrity, faces a profound ethical dilemma when he comes face-to-face with the Joker, a chaotic and malevolent force who thrives on anarchy and destruction. Despite the Joker's relentless efforts to destabilize Gotham and push Batman into compromising his own principles, Batman consistently refuses to kill him. The opportunity to kill the Joker would have been an easy way out to stop the chaos. Instead, he chooses to capture and imprison the Joker. This decision ultimately reinforces the film's deeper themes about the nature of good and evil, the consequences of choices, and the complexities of heroism in a morally ambiguous world.

A. What should Batman do if he was a utilitarian? (3 marks) ★ Past Exam

B. What should Batman do if he was a deontologist? (3 marks) ★ Past Exam

Chapter 2: Ethical Theories

Multiple Choice

1. According to Kant, which of the following actions has moral worth? ★ Past Exam
 - A) An action that maximizes happiness for the majority.
 - B) An action done in accordance with duty, regardless of consequences.
 - C) An action done out of self-interest.
 - D) An action that conforms to societal norms.
2. Which of the following best captures the principle of Act Utilitarianism? ★ Past Exam
 - A) An action is morally right if it results in the greatest overall happiness, irrespective of established rules.
 - B) Actions are right if they conform to a set of moral rules.
 - C) Actions are right if they promote individual well-being over societal well-being.
 - D) An action is morally right if it can be universalized.
3. What distinguishes Rule Utilitarianism from Act Utilitarianism? ★ Past Exam
 - A) Rule Utilitarianism focuses on following rules that, when generally adopted, lead to the greatest happiness.
 - B) Rule Utilitarianism evaluates each action on a case-by-case basis.
 - C) Rule Utilitarianism disregards the importance of happiness.
 - D) Rule Utilitarianism focuses on maximizing individual freedoms.
4. According to Rawls' "Principles of Justice," when are social and economic inequalities justified? ★ Past Exam
 - A) When they lead to an overall increase in society's funds.
 - B) When they benefit those with the most resources.
 - C) When they result in the greatest advantage for the least-advantaged members of society.
 - D) When they promote individual liberty above all else.
5. The idea that social and economic inequalities must be to the greatest benefit of the least-advantaged members of society is called ★ Past Exam
 - a) Capitalism.
 - b) Communism.
 - c) Socialism.
 - d) Utilitarianism.
 - e) The difference principle.
6. The core principles of John Rawls' theory of justice are: ★ Past Exam
 - A) Equal basic rights and liberties
 - B) Social and economic equalities
 - C) Inequal basic rights and liberties
 - D) Social and economic inequalities
7. A right that is guaranteed without exception is called a ★ Past Exam
 - a) Positive right.
 - b) Negative right.
 - c) Absolute right.
 - d) Limited right.
 - e) Proverbial right.

8. A right that another can guarantee by leaving you alone to exercise your right is called a ★ Past Exam
- a) Positive right.
 - b) Negative right.
 - c) Absolute right.
 - d) Limited right.
9. Which of the following is an example of positive rights? ★ Past Exam
- a) The right to receive healthcare services
 - b) The right to access public health protection programs
 - c) The right to personal privacy
 - d) Both a and b
 - e) All of the above
10. A government guaranteeing free basic healthcare to all citizens is an example of: ★ Past Exam
- A) A negative right
 - B) A privilege, not a right
 - C) A positive right
 - D) A natural right
11. A negative right means that others must refrain from interfering, allowing you to freely exercise your rights. (True/False) ★ Past Exam
12. According to social contract theory, what is the purpose of state? ★ Past Exam
- A) To maximize happiness.
 - B) To enforce individual positive rights only.
 - C) To protect natural rights.
 - D) To promote virtue.
13. The social contract is _____. ★ Past Exam
- a) an agreement among people to share certain interests and make certain compromises for the good of them all
 - b) mainly an agreement of equally selfless and unselfish persons not to commit theft or murder
 - c) a choice to serve the public interest at the expense of a small number of individuals
 - d) the only popular political theory
14. Social contract theory assumes that everyone in society ought to bear certain burdens in order to receive certain benefits. (True / False / Maybe) ★ Past Exam
15. Which of the following best represents Social Contract Theory in practice? ★ Past Exam
- A) Citizens consenting to laws for mutual benefit
 - B) Acting out of duty without considering consequences
 - C) Seeking the greatest good for the greatest number
 - D) Emulating moral exemplars
16. A critique of Social Contract Theory is that it: ★ Past Exam
- A) Relies too heavily on divine intervention
 - B) Does not account for marginalized groups
 - C) Overemphasizes cultural norms
 - D) Focuses exclusively on individual virtue

17. Kant argued that morality must ultimately be grounded in the concept of _____ that humans have to one another, and never in the _____ of human actions. ★ Past Exam
18. The morality of an action has nothing to do with the _____ behind the action. ★ Past Exam
19. Both Kantianism and Social Contract Theory are based on the notion of _____ moral rules. ★ Past Exam
20. According to Kant's moral philosophy, which of the following does not reflect the core idea of the categorical imperative? ★ Past Exam
- We must never treat individuals solely as tools to achieve our goals, but always as valuable in themselves.
 - Moral rules should be based on principles that everyone in similar situations could consistently follow.
 - It is always unethical to use people in scientific research, since this treats them only as means.
 - One should only act according to principles that they could want to be universal laws.
21. Kantianism allows no exceptions to perfect duties. (True/False) ★ Past Exam
22. Kantian ethics emphasizes that some actions are wrong due to their inherent nature, not just because of their outcomes. (True/False) ★ Past Exam
23. Some utilitarians believe utility means maximizing intrinsic goods like happiness, while others focus on fulfilling individual preferences. (True/False) ★ Past Exam
24. According to which moral theory is the question, "What would a person of superior character do in this context?" asked? ★ Past Exam
- Ethical Relativism
 - Virtue Ethics
 - Utilitarianism
 - Deontology
 - None of the above
25. What is virtue ethics? ★ Past Exam
- Virtue ethics is the approach that people will behave due to a set of virtues they have.
 - Virtue ethics is the approach that people will behave because of the consequences of their actions.
 - Virtue ethics is the approach that people will behave because they feel a duty to be responsible.
 - Virtue ethics is the approach that people will behave based on their ideals and ambitions.
26. Virtue Ethics... ★ Past Exam
- Assumes good businesses will make good decisions
 - Assumes good governments will enforce good ethical practices on their businesses
 - Assumes good persons will make good decisions and personal qualities affect decisions.
 - Assumes good persons will make good decisions but it has nothing to do with personal qualities.
27. The character trait that prevents a human being from flourishing is called? ★ Past Exam
- Intellectual virtue.
 - Moral virtue
 - Vice
 - None of the above
28. According to Virtue Ethics, a right action is what a _____ person would do in the same circumstances. ★ Past Exam

Chapter 3: Professional Ethics

Multiple Choice

1. Which of the following is NOT a principle used for evaluating rules of conduct? ★ Past Exam
 - a) Justice
 - b) Fairness
 - c) Efficiency
 - d) Autonomy
2. _____ are the evaluative standards used to justify rules of conduct. ★ Past Exam
 - a) Social policies
 - b) Principles
 - c) Directives
 - d) All of the above
3. In a moral system, _____ are action-guiding rules, while _____ are the standards used to justify these rules. ★ Past Exam
4. Which of the following requirement is not mentioned in computer related profession? ★ Past Exam
 - a) Team work is required.
 - b) Membership in professional society optional
 - c) College degree is required
 - d) Certification and licensing not required
5. Which one is not the characteristics of a profession? ★ Past Exam
 - a) Autonomy
 - b) Certification & Licensing
 - c) Informal Education
 - d) Professional development
 - e) Code of ethics
6. In a client – professional relationship, if both client and professional play a role in decision making, this trust model is called _____. ★ Past Exam
 - a) Agency model
 - b) Paternalistic model
 - c) Fiduciary model
 - d) None of them.
7. _____ is the trust model between a professional and the client in which both parties play a dominant role in decision-making. ★ Past Exam
 - a) Paternalistic model
 - b) Fiduciary model
 - c) Agency Model
 - d) None of the above.
8. Which of the following models describes a relationship where the professional makes all decisions without involving the client? ★ Past Exam
 - a) Trust model
 - b) Agency model
 - c) Paternalistic model
 - d) Fiduciary model
9. Which model of professional-client relationship is characterized by the professional doing exactly what the client instructs? ★ Past Exam
 - a) Paternalistic model
 - b) Agency model
 - c) Trust model
 - d) Contractual model

10. What does the Trust model in professional relationships entail? ★ Past Exam
- a) The client makes all decisions and the professional follows
 - b) Both the client and professional share decision-making responsibilities
 - c) The professional acts solely on behalf of the client's wishes
 - d) The professional takes on full responsibility for the outcomes
11. What is the moral foundation of the employer-employee relationship according to professional ethics?
★ Past Exam
- a) Employees should always prioritize client needs
 - b) Both parties must treat each other with respect and not as a means to an end
 - c) Employees must agree to all employer terms
 - d) Employers should take advantage of employees' skills to maximize profit
12. According to which moral theory does the moral worth of an individual's action depend exclusively on the moral acceptability of the general rule of conduct on which the person is acting? ★ Past Exam
- a) Utilitarianism
 - b) Kantianism (universalized)
 - c) Rights theory (Social Contract)
 - d) Virtue theory
 - e) None of the above
13. Which of the following statement is not true about Code of Ethics ★ Past Exam
- a) Cannot provide a complete ethical framework
 - b) Laws passed by public legislative bodies
 - c) Helps in inspiring public trust and respect for the profession
 - d) Can be useful tools for computer practitioners for decision making
14. What is the primary role of a professional code of ethics? ★ Past Exam
- a) To create laws for ethical behavior
 - b) To inspire trust and outline the profession's standards
 - c) To replace moral reasoning with legal frameworks
 - d) To provide absolute answers to ethical dilemmas
15. A professional code of ethics mainly exists to protect professionals from being blamed for their decisions. (Correct the statement — it is false) ★ Past Exam
16. Why is enforcing ethical codes generally more complex than enforcing laws? ★ Past Exam
- a) Ethical violations automatically result in legal penalties.
 - b) Ethical codes rely on professional judgment and moral interpretation rather than legally binding rules.
 - c) Ethical standards are universally interpreted and consistently applied across professions.
 - d) Legal rules are based on personal values, whereas ethical codes are entirely objective.

17. Which limitation most weakens the effectiveness of organizational ethical codes in ensuring consistent ethical compliance? ★ Past Exam

- a) They take precedence over legal requirements in all circumstances.
- b) They replace the need for individual ethical judgment.
- c) They apply rigid moral rules without regard to context.
- d) They are sometimes vaguely worded, enabling inconsistent or selective enforcement.

18. A professor accepts a consulting job with a company whose software they are evaluating in a research project. What ethical principle is at risk? ★ Past Exam

- A) Academic freedom
- B) Conflict of interest
- C) Professional networking
- D) Corporate partnership

19. A software consultant is negotiating a contract with a local community to design their traffic control system (TCS). He recommends they select the TCS system out of several available systems on the market. The consultant fails to mention that he is a major stockholder of the company producing TCS software. Which of the following ACS Code of Professional Conduct values and its relevant clauses have been violated by the software consultant? ★ Past Exam

- a) 1.2.1 Public Interest: Advise your stakeholders as soon as possible of any conflicts of interest or conscientious objections that you have.
- b) 1.2.3 Honesty: Not knowingly mislead a client or potential client as to the suitability of a product or service.
- c) 1.2.4 Professionalism: Refrain from any conduct or action in your professional role which may tarnish the image of the profession or detract from the good name of the ACS.
- d) All of the above.

20. Intentional delivery of a product that still lacks key functionality or has known software defects is known as ★ Past Exam

- a) Incompetency
- b) Mea Culpa
- c) Red Lies
- d) All of the above

21. “Red lies” occur when a developer unintentionally gives wrong information about a project's progress. (True/False) ★ Past Exam

22. “Sweep it under the rug” refers to ignoring problems in a project instead of addressing them. (True/False) ★ Past Exam

23. A system administrator has authorized access to employee activity logs that may include private information. No misuse is suspected. What is the most ethical action? ★ Past Exam

- a) Access the information even if there are no legitimate security or operational purposes.
- b) Access the information only when required for legitimate security or operational purposes.
- c) Share the information with management to avoid personal responsibility.
- d) Ignore privacy concerns since access is permitted by policy.

24. What ethical concern may arise when confidentiality agreements are strictly enforced in employer–employee relationships? ★ Past Exam

- a) They may limit an employee's ability to report unethical or illegal behaviour.
- b) They always contradict professional ethical standards.

- c) They remove the need for ethical judgment in the workplace.
- d) They guarantee full transparency between employers and employees.

25. System administrators have limited access to company data and therefore face fewer ethical challenges. (True/False) ★ Past Exam

26. Developing safety-critical systems requires extra care, documentation, and rigorous testing to avoid harm. (True/False) ★ Past Exam

27. The League of Professional System Administrators (LOPSA) provides a code of ethics that includes professionalism and personal integrity. (True/False) ★ Past Exam

28. Ethical behaviour means following all laws and regulations, regardless of moral principles. (True/False) ★ Past Exam

29. Systems analysts are responsible for identifying business requirements and proposing technical solutions. (True/False) ★ Past Exam

30. Using open-source code without crediting the source is considered unethical and may violate intellectual property laws. (True/False) ★ Past Exam

31. A system analyst is asked to approve system requirements that meet business objectives, but ignore the accessibility and usability needs of certain user groups. What is the main ethical issue in this situation, and how should a professional system analyst respond? (1 Mark) ★ Past Exam

Whistleblowing

1. Which of the following best characterizes whistle-blowing as “disloyal” to an organization? ★ Past Exam

- A) Reporting a co-worker's minor policy violation
- B) Informing a competitor about internal processes
- C) Exposing serious legal violations that harm public safety
- D) Reporting poor customer service practices to upper management

2. Which of the following best describes an internal whistleblower? ★ Past Exam

- A) An individual who reports unethical behavior to external agencies
- B) An individual who reports unethical behavior to their immediate supervisor
- C) An individual who bypasses management and directly informs the media
- D) An individual who chooses not to report unethical behavior at all

3. Which of the following individuals can be considered a whistle-blower? ★ Past Exam

- a) One who discovers evidence of malpractice in the organization he works for and chooses to report it
- b) One who discovers evidence of malpractice in the organization he works for and chooses to ignore it
- c) One who discovers and ignores the fact that her company's main competitor is doing something unethical

- d) One who discovers and reports the fact that her company's main competitor is doing something unethical.
4. The whistle-blower who is motivated by retribution is called ★ Past Exam
- A) The Alarmist
 - B) The Altruist
 - C) The Bounty Hunter
 - D) The Avenger
5. What motivates an “Altruist” whistleblower? ★ Past Exam
- a) Retaliation against the organization
 - b) Desire to protect the public good
 - c) Seeking a monetary reward
 - d) Gaining personal recognition
6. The typical corporate response to whistle-blowing is: ★ Past Exam
- a) Punish the faulty directly
 - b) Change organization policy
 - c) To condemn it and express complete disapproval
 - d) None of answers
7. In professional ethics, what is the main consequence of external whistleblowing? ★ Past Exam
- a) It strengthens team spirit
 - b) It results in bad publicity for the organization
 - c) It promotes transparency and collaboration
 - d) It enhances the company's reputation
8. In professional ethics, why might internal whistleblowing fail? ★ Past Exam
- a) Because of strong organizational support
 - b) Due to lack of ethical guidelines
 - c) Because of a hostile and unethical organizational culture
 - d) Due to excessive use of legal recourse
9. Which of the following best illustrates whistleblowing? ★ Past Exam
- a) Whistleblowers always act in self-interest rather than public interest
 - b) Whistleblowing leads to absolute moral clarity in all situations
 - c) Whistleblowers are protected by law, making retaliation impossible
 - d) Whistleblowing aims to promote justice but can result in unjust retaliation
10. One of the questions that should be asked before whistle-blowing is: ★ Past Exam
- a) Is serious harm to the public at stake?
 - b) Have you told your manager and are you sure whistle-blowing will work?
 - c) Have you tried every possible inside channel?
 - d) Do you have persuasive documented evidence?
 - e) All of the above.
11. Whistle blowing is considered a threat to disrupt the fabric of organizational culture. Comment. (2 marks)
★ Past Exam

12. What is the difference between internal and external whistle-blowing? (essay) ★ Past Exam

13. Describe two measures that should be taken to avoid whistle blowing. (essay) ★ Past Exam

14. List the main three questions that should be asked before an employee blows a whistle externally. (essay)
★ Past Exam

15. According to Richard DeGeorge, mention two of the five questions that should be asked before external whistleblowing becomes a moral duty. ★ Past Exam

16. List two impacts of whistle blowing for each of the following: (a) Employee (b) Organization. (2 pts.) ★
Past Exam

Responsibility

1. It is responsibility borne because of a person's assigned duties: ★ Past Exam

- a) Role responsibility
- b) Causal responsibility
- c) Legal responsibility
- d) None of answers

2. Which of the following best describes "role responsibility"? ★ Past Exam

- a) Responsibility assigned by law
- b) Responsibility due to a person's job duties
- c) Responsibility to act morally
- d) Responsibility caused by an action

3. Which of the following responsibility is not exclusive? ★ Past Exam

- a) Causal responsibility
- b) Role responsibility
- c) Moral responsibility
- d) Legal responsibility

4. Moral, Role and Casual responsibilities are all exclusive responsibilities. (Correct the statement — it is false)
★ Past Exam

Scenario: Jane the QA Engineer (Software Sign-off)

A small software company is working on an integrated inventory control system for a very large national shoe manufacturer. The system will gather sales information daily from shoe stores nationwide. This information will be used by the accounting, shipping, and ordering departments to control all of the functions of this large corporation. The inventory functions are critical to the smooth operation of the system. Jane, a quality assurance engineer with the software company, suspects that the inventory functions of the system are not sufficiently tested, although they have passed all their contracted tests. She is pressured by her employers to sign off on the software. Legally she is only required to perform those tests which have been agreed to in the original contract. However, her considerable experience in software testing has led her to be concerned over risks of the system. Her employers say that they will go out of business if they do not deliver the software on time. Jane contends if the Inventory sub-system fails, it will significantly harm their client and its employees. If the potential failure were to threaten lives, it would be clear to Jane that she should refuse to sign off. But since the degree of threatened harm is less, Jane is faced with a difficult moral decision.

Task. Using the following ethical theories, evaluate whether Jane should accept or refuse to sign off: A. Deontology (2.5 marks) B. Utilitarianism (2.5 marks) ★ **Past Exam**

Scenario: Joe and the Campus Computer

Joe is working on a project for his computer science course. The instructor has allotted a fixed amount of computer time for this project. Joe has run out of time, but has not yet finished the project. The instructor cannot be reached. Last year, Joe worked as a student programmer for the campus computer centre and is quite familiar with procedures to increase time allocations to accounts. Using what he learned last year, he is able to access the master account. Then he gives himself additional time and finishes his project.

Task. Using the ethical analysis rubric, summarize the scenario, identify the ethical issues and conduct ethical analysis using Social Contract Theory to decide whether Joe's action is morally justifiable. (4 marks) ★ **Past Exam**

Scenario: Diane the Consultant

Three years ago, Diane started her own consulting business. She has been so successful that she now has several people working for her and many clients. Their consulting work included advising on how to set up corporate intranets, designing database management systems, and advising about security. Presently she is designing a database management system for the personnel office of a medium-sized company. Diane has involved the client in the design process, informing the CEO, the director of computing, and the director of personnel about the progress of the system. It is now time to make decisions about the kind and degree of security to build into the system. Diane has described several options to the client. Because the system is going to cost more than they planned, the client has decided to opt for a less secure system. She believes the information they will be storing is extremely sensitive. It will include performance evaluations, medical records for filing insurance claims, salaries, and so forth. With weak security, employees working on client machines may be able to figure out ways to get access to this data, not to mention the possibility of on-line access from hackers. Diane feels strongly that the system should be much more secure. She has tried to explain the risks to the CEO, director of computing and director of personnel all agree that less security will do.

- a. Identify five (5) relevant clauses which will help Diane to take a decision on either building the system or refusing to build the system. (1.5 mark) ★ Past Exam

- b. Based on part a, give your ethical judgement whether Diane should build the system or refuse to do so as the client has requested. (1 mark) ★ Past Exam

- c. Give your ethical judgement based on any two of the following theories whether Diane should build the system or refuse to do so: (i) Social Contract Theory, (ii) Virtue Ethics Theory, (iii) Act Utilitarianism Approach. (2 marks) ★ Past Exam

Scenario: Ali and the Desktop Monitoring Software

One afternoon when browsing through desktop files, Ali realizes that his supervisor installed desktop sharing application on his computer in order to monitor his workplace activity. Ali never got notified about the software installation and he believes that such actions demonstrate lack of faith in his ability to work professionally. On the other hand, the supervisor is convinced that he is entitled to monitor workplace activities of his staff member.

Task. Summarize the scenario and identify the ethical issues. Conduct an ethical analysis using ONE ethical theory of your choice: Social Contract Theory or Virtue Ethics Theory. (2 marks) ★ Past Exam

Scenario: Ali, the System Administrator, and Yusuf's Files

Ali, a system administrator for a large corporation, is installing a new software package on the PC used by employee Yusuf. The company has not authorized Ali to read other people's files (email, web-logs and files in the user's home folders). However, in the course of installing the software, Ali accidentally comes across directories with files that have suspicious sounding names. Ali opens a few of the files and finds they contain stuff which proves freelancing projects involvement at Yusuf's end. Ali knows this is in violation of company policy.

Task. What should Ali do in this regard? What kind of relevant clauses from ACM code of ethics help you in taking such a decision? (3 marks) ★ **Past Exam**

Scenario: XYZ Corporation, Chris, and Robin

XYZ Corporation plans to monitor secretly the Web pages visited by its employees, using a data-mining program to analyze the access records. Chris, an engineer at XYZ, recommends that XYZ purchase a data-mining program from Robin, an independent contractor, without mentioning that Robin is Chris's domestic partner. Robin had developed this program while previously employed at UVW Corporation, without the awareness of anyone at UVW.

- a. Identify the relevant clauses with relevant justification, which have been violated by different players in this scenario. (2 marks) ★ **Past Exam**

- b. What is the final ethical judgement with respect to the actions taken by the various players? (0.5 marks) ★ **Past Exam**

Chapter 4: Technical and Ethical Issues with SA and SD

Multiple Choice

1. Which of the following is NOT a key responsibility of a system analyst? ★ Past Exam
 - A) Identifying business needs
 - B) Developing user interfaces
 - C) Writing and testing software code
 - D) Designing system requirements
2. What is the main ethical issue in “Extreme Pressure” situations? ★ Past Exam
 - A) Developers take long vacations
 - B) Teams skip essential SDLC steps to meet deadlines
 - C) Engineers overestimate project costs
 - D) Clients request additional features
3. “Unauthorized software use” means: ★ Past Exam
 - A) Using only licensed programs
 - B) Using illegal or uncredited software for tasks
 - C) Sharing software updates with others
 - D) Installing software with user permission
4. The main goal of Quality Assurance (QA) in software development is to: ★ Past Exam
 - A) Reduce project duration
 - B) Guarantee reliable operation and reduce errors
 - C) Replace failed hardware components
 - D) Deliver incomplete software early
5. Which of the following best describes Informed Consent in system administration? ★ Past Exam
 - A) Allowing users to set their own passwords
 - B) Informing users about system policies and monitoring rules
 - C) Sharing private data with management
 - D) Restricting users from system access
6. The ethical issue called “Whistleblower Situation” occurs when: ★ Past Exam
 - A) An engineer refuses to test software
 - B) A system administrator reports unethical or illegal activities in the company
 - C) Employees use company computers for personal work
 - D) Developers make software changes without permission
7. Which statement best defines privacy? ★ Past Exam
 - A) The right to be let alone, or freedom from interference or intrusion
 - B) Mandatory disclosure of personal information
 - C) Sharing user data for marketing
 - D) Government monitoring of citizens

8. Cyber-privacy focuses on: ★ Past Exam
- A) The speed of internet connections
 - B) What data should be collected, who can access it, and how long it is retained
 - C) Building faster processors
 - D) Minimizing software costs
9. Why is N-version programming considered an effective approach for reducing the impact of software errors in safety-critical systems? ★ Past Exam
- a) It ensures that all software versions always produce identical outputs under all conditions.
 - b) It runs multiple independently developed versions in parallel and uses a voting mechanism to determine the correct output.
 - c) It removes the need for extensive software testing prior to deployment.
 - d) It guarantees that hardware failures cannot lead to catastrophic system outcomes.
10. In safety-critical software development, what is the purpose of “N-version programming”? ★ Past Exam
- A) To minimize redundancy in software design
 - B) To allow multiple software versions to run in sequence
 - C) To increase the testing coverage by independently implementing requirements multiple times
 - D) To provide a backup solution in case of hardware failure
11. Which of the following best describes the concept of “redundancy” in a safety-critical system? ★ Past Exam
- A) Logging all redundant systems errors for future reference
 - B) Using multiple, interchangeable components for a single function
 - C) Conducting extensive risk analysis
 - D) Running multiple versions of the software in different environments
12. What is the primary purpose of redundancy in the development of safety-critical systems? ★ Past Exam
- a) To minimize system complexity and streamline development processes
 - b) To increase system performance and optimize resource utilization
 - c) To enhance system reliability and fault tolerance by introducing duplicate components or subsystems
 - d) To reduce the overall cost of system maintenance and support
13. A hospital pressures engineers to immediately deploy an energy-efficient update to a life-support system despite limited testing, accepting full responsibility for any consequences. Ethically, what should matter most in the engineers' decision? ★ Past Exam
- a) Legal protection provided by the hospital
 - b) Financial savings from immediate deployment
 - c) The likelihood and severity of potential patient harm
 - d) Past reliability of similar systems
14. Which situation best illustrates a conflict between legal obligation and ethical responsibility? ★ Past Exam
- a) A physician follows approved medical protocols even though an untested treatment might offer better results.
 - b) A lawyer provides legal defence to a client despite personal doubts about the client's innocence.

- c) A software engineer identifies a serious security vulnerability but is legally restricted from disclosure by a non-disclosure agreement.
 - d) A journalist publishes classified information obtained through illegal means to reveal corruption
15. A program code written together by N-programmers implementing the same set of program statements is called N Programming. (True/False — correct if false) ★ Past Exam
16. We should use Act Utilitarianism ethical approach to maintain professional ethics. (True/False) ★ Past Exam
17. Resources and time needed to ensure quality are often cut under the extreme pressure to ship a new product. (True/False) ★ Past Exam
18. How can the agency model in a client–professional relationship create ethical dilemmas? ★ Past Exam
- a) It guarantees that professionals always have greater authority than their clients.
 - b) It removes the need for professionals to exercise independent ethical judgment.
 - c) It ensures that ethical responsibility is equally shared in all decisions.
 - d) It may require professionals to act on behalf of clients even when the client's requests conflict with ethical standards.
19. A system administrator is instructed to lower security controls to reduce costs, despite identifying significant vulnerabilities. What is the most ethically appropriate response? ★ Past Exam
- a) Proceed with the request and formally record the security reductions.
 - b) Implement the changes while secretly adding compensating controls.
 - c) Decline to weaken security and formally escalate the concern through appropriate management channels.
 - d) Accept the changes and rely on user training to offset the security risks.

Short Answer / Essay

1. Explain any three characteristics of a profession. ★ Past Exam

2. Describe any three ethical issues that are faced by the software developers while developing the software. ★ Past Exam

OR

3. Describe any three software engineer practices in safety-critical-software systems development process in order to ensure their safety and reliability. ★ Past Exam

Chapter 6: Security Issues and Their Countermeasures

Multiple Choice

1. Which of the following best describes a structured attack? ★ Past Exam
 - A) It uses commonly available hacking tools with little understanding of the target system.
 - B) It is carried out by individuals with advanced technical knowledge who design custom tools.
 - C) It uses commonly available hacking tools but does not expose sensitive information to the attacker.
 - D) It is carried out by individuals with advanced technical knowledge but do not expose sensitive information to the attacker.
2. What makes a structured network attack more dangerous than an unstructured one? ★ Past Exam
 - a) Structured attacks primarily target publicly available data, while unstructured attacks target private data
 - b) Structured attacks often have insider information and custom-developed tools to exploit specific weaknesses
 - c) Unstructured attacks typically involve more resources.
 - d) Structured attacks do not rely on specially designed tools, while unstructured attacks do.
3. Why are DDoS attacks more challenging to mitigate compared to DoS attacks? ★ Past Exam
 - a) DDoS attacks are limited to attacking cloud-based servers.
 - b) DDoS attacks originate from multiple distributed sources, making it difficult to identify and block all sources
 - c) DDoS attacks rely on user consent to initiate attacks, making it difficult to identify and block all sources
 - d) DDoS attacks are always localized within one wide geographic region making it difficult to identify and block all sources
4. How does IP address spoofing facilitate network attacks? ★ Past Exam
 - A) By exploiting software vulnerabilities to gain unauthorized access.
 - B) By embedding malicious code that executes upon certain conditions.
 - C) By overwhelming network traffic to prevent legitimate access.
 - D) By modifying packets to make them appear as legitimate traffic.
5. In a scenario where IP address spoofing is detected, what is the most likely implication? ★ Past Exam
 - a) A user has a disabled network protocol
 - b) The attacker can alter packet data
 - c) Security controls will not be enforced
 - d) User data is being encrypted
6. What is a key characteristic of a logic bomb in cybersecurity? ★ Past Exam
 - A) It is used in denial-of-service attacks to overwhelm resources.
 - B) It activates when specific conditions are met within a system.
 - C) It is used to create backdoor access for unauthorized users.
 - D) It spreads through the network to infect multiple devices.

7. What is the primary distinction between cyber-piracy and cyber-vandalism? ★ Past Exam
- A) Cyber-piracy requires more advanced skills than cyber-vandalism.
 - B) Cyber-piracy is motivated by political gains, while cyber-vandalism aims to disrupt services.
 - C) Cyber-piracy involves reproducing proprietary software, while cyber-vandalism involves disrupting operations.
 - D) Cyber-piracy is aimed at causing economic harm, whereas cyber-vandalism is primarily for personal gain.
8. Compromised-key attacks often focus on: ★ Past Exam
- a) Exploiting software weaknesses in user applications
 - b) Gaining access to cryptographic keys, enabling attackers to decrypt secure communications
 - c) Disabling public internet services, enabling attackers to stop communications
 - d) Spoofing legitimate devices on a network
9. Cyber-vandalism often involves the alteration or deletion of critical data, leading to financial losses or operational disruptions for the victim organization. (True/False) ★ Past Exam
10. Cyberterrorism always involves the use of violence or physical harm in conjunction with cyberattacks. (True/False) ★ Past Exam
11. Hacktivism is exclusively motivated by financial incentives, such as ransom demands or data theft. (True/False) ★ Past Exam
12. Compromising security may be considered acceptable in certain situations if it leads to faster development or lower costs for the software project. (True/False) ★ Past Exam
13. Phishing primarily targets software vulnerabilities in systems. (True/False) ★ Past Exam
14. Phishing is considered particularly effective due to: ★ Past Exam
- a) Convincing users to download sophisticated hacking software that bypasses technical security
 - b) Exploiting human psychology to gain access without directly attacking technical defenses
 - c) Relying on advanced technical vulnerabilities that are hard to detect by users
 - d) Using complex hacking algorithms to trick only experienced users
15. A cloud-hosted system experiences a breach where attackers modify data and maintain access without exploiting infrastructure vulnerabilities or stealing new credentials. Logs show only legitimate API calls. Which explanation is most consistent with this scenario? ★ Past Exam
- A) The breach resulted from an infrastructure-level compromise
 - B) The attackers leveraged trusted interfaces with excessive implicit trust
 - C) The cloud provider failed to isolate tenant environments
 - D) The incident must involve malware injection into the cloud platform
16. An attacker listens to network traffic in one case, and in another case intercepts and alters the communication flow without detection. Which distinction is most accurate? ★ Past Exam
- A) The second attack introduces an active manipulation layer
 - B) Both are passive attacks, differing only in scale
 - C) The first attack requires a higher skill than the second
 - D) Both attacks require compromised encryption keys

17. A system becomes unresponsive after receiving numerous incomplete authentication requests. Investigation reveals that some requests were triggered by users misled into interacting with malicious prompts, while others were automated. Which interpretation is most precise? ★ Past Exam

- A) The issue is mainly caused by resource exhaustion due to inefficient handling of authentication requests, without significant involvement of user actions
- B) The failure is primarily due to weaknesses in how user credentials are verified, rather than limitations in system resources
- C) The disruption results from both system resource exhaustion caused by incomplete authentication requests and attacker-driven user interaction
- D) The problem arises from encryption-related overhead that reduces system performance under heavy load

18. Before launching an attack, an adversary gathers organizational charts, employee habits, and internal communication styles. What is the primary strategic benefit? ★ Past Exam

- A) Eliminates the need for system access
- B) Directly bypasses encryption mechanisms
- C) Guarantees administrative privileges
- D) Enables crafting highly credible attack vectors

19. A highly secure system can lead users to adopt unsafe workarounds (e.g., writing down credentials, sharing access). What is the best interpretation? ★ Past Exam

- A) Security strength directly correlates with system safety
- B) Overemphasis on security can degrade overall system resilience
- C) Usability has no impact on security outcomes
- D) The issue is unrelated to system design

20. Two systems are attacked: System A: Secure data is copied without alteration; System B: Data remains accessible but is subtly modified. Which statement is most precise? ★ Past Exam

- A) Both primarily violate confidentiality
- B) Both attacks are equivalent in impact
- C) System B violates availability first; System A violates confidentiality
- D) System A violates confidentiality; System B primarily violates integrity

Short Answer / Essay

1. Define the security concepts: Daisy chaining and Zero-Day Attack. (1 mark) ★ Past Exam

2. Explain what a Denial-of-Service (DoS) attack is and give one example. (1.5 mark) ★ Past Exam

