



(University of Choice)

**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

MAIN CAMPUS

**UNIVERSITY EXAMINATIONS
2022/2023 ACADEMIC YEAR**

**THIRD YEAR SECOND SEMESTER MAIN EXAMINATIONS
MAIN EXAM**

**FOR THE DEGREE
OF
BACHELOR OF SCIENCE IN BIOTECHNOLOGY**

COURSE CODE: BMB 323

**COURSE TITLE: ETHICS, RISKS AND TRENDS IN
BIOTECHNOLOGY**

DATE: 21ST APRIL 2023

TIME: 11.00 – 1.00PM

INSTRUCTIONS TO CANDIDATES

This paper is divided into three sections, **A B** and **C**, carrying respectively: Multiple Choice Questions (**MCQs**), Short Answer Questions (**SAQs**) and Long Answer Questions (**LAQs**). **Answer all questions. DO NOT WRITE ON THE QUESTION PAPER.**

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 4 Printed Pages. Please Turn Over.

SECTION A: Multiple Choice Questions (20 Marks)

1. Ethics can be defined as:
 - a) A process of reasoning in terms of the right thing to do.
 - b) Rules governing society.
 - c) The basis of the criminal code.
 - d) A list of rights and wrongs.
2. A guarantee of confidentiality is:
 - a) A guarantee that some information will remain confidential and will not be disclosed.
 - b) Always required by proper ethical standards in research.
 - c) Essential for every participant in a research project.
 - d) Only given under duress.
3. In carrying out the research, the researcher should engage properly and thoroughly with:
 - a) The media.
 - b) The literature on the topic.
 - c) Their peers.
 - d) Art and science.
4. There are potential risks and harms in:
 - a) Every stage of the research process.
 - b) Some research projects.
 - c) Research projects that engage with human populations.
 - d) Some research projects that engage with human populations.
5. The principle of informed consent is:
 - a) Of little use in business research.
 - b) Essential to the relationship between the researcher and the research project.
 - c) A key ethical concern.
 - d) A key data gathering method.
6. The principle of informed consent holds:
 - a) That all resources used in the research project must be properly referenced and acknowledged.
 - b) The researcher must inform the research supervisor of every development in the research project.
 - c) The researcher must inform the research supervisor of every ethical development in the research project.
 - d) Participants agree to participate in a research project when they have been fully informed of any and all potential consequences.
7. Research ethics committees are:
 - a) Committees of researchers.
 - b) Convened by organizations to monitor and police the ethical standards of research projects carried out under their auspices, under their name.
 - c) Committees of researchers concerned with ethics.
 - d) Concerned only with research conducted in the medical sciences.
8. A 43-year-old male patient asks for a privately paid for gold crown on his upper right lateral incisor. He wants to have it done as within his culture it is symbolic of wealth and good fortune and it would, he says, elevate his social standing. The patient is an irregular attender but his oral and dental health is good with no decay or restorations present. In deciding whether or not to accede to his request which are the competing principles?
 - a) Autonomy, beneficence and justice
 - b) Autonomy, non-maleficence and justice

- c) Autonomy, non-maleficence and beneficence
 - d) Non-maleficence, beneficence and justice
9. Essential in ethics and ethical standards is:
- a) A good grasp of research methods.
 - b) The capacity to produce good research.
 - c) A good understanding of business.
 - d) The capacity to distinguish between right and wrong.
10. The ethically reflective practitioner:
- a) Engages in research on ethics.
 - b) Thinks critically about the standard of their research and their code of conduct and behavior as a researcher.
 - c) Is particularly bound by rules and standards.
 - d) Wastes a lot of time just thinking.
11. Integrity and transparency are fundamental:
- a) Issues in business.
 - b) Requirements in research.
 - c) Ethical principles in research.
 - d) Methodologies in research.
12. Which one of the following is a major type of ethical issues?
- a) Communication issues
 - b) Systematic issues
 - c) Common issues
 - d) Language issues
13. Factor that affects ethical and unethical behavior
- a) Ethical dilemma
 - b) Diversity
 - c) Teamwork
 - d) Open communication
14. According to the Hippocratic Oath which of the four principles might be regarded as a 'guiding principle'?
- a) Autonomy
 - b) Non-maleficence
 - c) Beneficence
 - d) Justice
15. The following is an alternative to moral principles
- a) Virtue Ethics
 - b) Logic Ethics
 - c) Real Ethics
 - d) A and C
16. Which one of the following are major obstacles to good physician-patient communication
- a) Differences of language and culture.
 - b) Differences of signs and culture
 - c) Differences of symptoms and culture
 - d) Differences of language and gender
17. Which one of the following describes one who believes in making decisions for the good of much people?
- a) Utilitarianism
 - b) Teleology
 - c) Deontology
 - d) Egoism

18. Which of these is a factor that affects ethical and unethical behavior?
- Ethical dilemma
 - Diversity
 - Teamwork
 - Open communication
19. An instructor is teaching medical students about principles of ethics in health care, and she tells them that the utmost important principle to observe while taking care of patient is doing no harm. The principle of Ethics she described here:
- Beneficence
 - Justice
 - Nonmaleficence
 - Respect for autonomy
20. The principle of informed consent is:
- Of little use in business research.
 - Essential to the relationship between the researcher and the research project.
 - A key ethical concern.
 - A key data gathering method.

SECTION B: Short Answer Question (40 marks)

- Explain the scope of Bioethics with the current biotechnology (8 marks)
- Describe ethics (8 marks)
- State the difference between medical ethics and bioethics (4 marks)
- Explain the principles/values in Medical Ethics that commonly apply to medical ethics (4 marks)
- The use of animals in agriculture raises many ethical issues. Highlight some of the issues and views about the moral status of animals and humans' responsibilities (8 marks)
- Explain the potential benefits and Health risks associated with genetically Modified food (8 marks)

SECTION C: Long Answer Question (60 marks)

- Discuss the recent trends in biotechnology (20marks)
- Discuss basic ethical principles and concepts of importance for prenatal diagnosis (20 marks)
- Discuss various categories of ethical issues in Biotechnology (20 marks)