



(University of Choice)

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

MAIN CAMPUS

**UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR**

MAIN EXAM

THIRD YEAR SECOND SEMESTER EXAMINATIONS

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

COURSE CODE: BMB 323

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

DATE: 21/04/2022

TIME: 12.00 -2.00 PM

INSTRUCTIONS TO CANDIDATES

This paper consists of three sections:

- i. Section A – Multiple Choice Questions
- ii. Section B – Short Answer Question
- iii. Section C – Long Answer Question.

Answer all questions

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 (MCQs)**(20 marks)**

1. Integrity and transparency are fundamental:
 - a) Issues in business.
 - b) Requirements in research.
 - c) Ethical principles in research.
 - d) Methodologies in research.
2. Why is it important that personal data about research participants are kept within secure, confidential records?
 - a) So that the participants cannot find out what has been written about them.
 - b) In case individuals, places, or organizations can be harmed through identification or disclosure of personal information.
 - c) So that government officials, teachers, and other people in authority can have easy access to the data.
 - d) To enable the researcher to track down individuals and find out more about their lives.
3. 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.
4. Which method is most commonly associated with a lack of informed consent?
 - a) Qualitative content analysis
 - b) In-depth interviewing
 - c) Covert observation
 - d) Structured interviewing
5. 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.
6. 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:
 - a) Beneficence
 - b) Justice
 - c) Nonmaleficence
 - d) Respect for autonomy
7. Which one of the following describes 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.
8. 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.
9. 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.
10. 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.
11. 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.
12. 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.
13. 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
16. 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
17. Which one of the following is a major type of ethical issues?
- a) Communication issues
 - b) Systematic issues
 - c) Common issues
 - d) Language issues
18. The following is an alternative to moral principles
- a) Virtue Ethics
 - b) Logic Ethics
 - c) Real Ethics
 - d) A and C
19. 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
20. Why therapeutic cloning is considered to be controversial?
- a) It creates a cloned human
 - b) It can be used to treat many medical diseases and disorders
 - c) It uses somatic cells from an embryo that is allowed to die after they are extracted
 - d) It uses stem cells from an embryo that is allowed to die after they are extracted

Section B: Short Answer Question 40 marks

1. Explain why ethics is importance to medicine (8 marks)
2. Explain three main secular ethical traditions/ ethical theories that justify/explain the rightness or wrongness of certain kinds of actions (8 marks)
3. Explain the prominent issues in medical ethics that relate to the beginning of human life (8 marks)
4. Describe the theoretical ethical approaches applied in bioethics (8marks)

5. Explain ethical issues in gene therapy in modern society (8marks)

Section C: Long Answer Question 60 marks

1. Describe the basic principles of research ethics/requirements taken primarily from the Declaration of Helsinki (20 marks)
2. Discuss basic ethical principles and concepts of importance for prenatal diagnosis (20 marks)
3. Discuss different approaches to ethical decisions including your own in medicine (20 marks)