

KATHMANDU UNIVERSITY
End Semester Examination
July/August, 2024

Marks Scored:

Level : B.Tech.

Year : III

Exam Roll No. :

Time: 30 mins.

Registration No.:

Course : BIOT 314

Semester : II

F. M. : 20

Date : 16 AUG 2024

SECTION "A"

[10 Q. × 1 = 10 marks]

Choose and mark [X] the most appropriate option from each set of choices

- Who is considered the father of medicine in Western culture?
a. Aristotle b. Don Marquis c. Hippocrates d. Immanuel Kant
- According to Libertarian theory,
a. more than habitual training a correct motivational structure is required to be virtuous
b. a situation is deemed just if it has the best possible outcome, no matter what the potential inequalities
c. the purpose of morality is to maximize benefits to others
d. justice is a fair process, even if outcomes are uneven
- _____ abortions result from a medical problem where allowing the pregnancy to continue to birth would endanger the woman's health.
a. IUD b. Therapeutic c. Selective d. Eugenic
- Which of the following is NOT described about abortion in Hindu texts?
a. Abortion is equivalent to killing of a priest
b. Abortion is a worse sin than killing one's parents
c. A woman who aborts her child will lose her caste
d. Abortion is a sin punishable by death
- Apart from hematopoietic stem cells, what is the other predominant type of stem cell the bone marrow contains?
a. Very small embryonic like stem cells b. Induced pluripotent stem cells
c. Mesenchymal stem cells d. Embryonic stem cells
- What is transdifferentiation of stem cells?
a: Conversion of stem cells from one cell/tissue lineage to another completely new cell/tissue lineage.
b. Conversion of stem cells from an immature to a matured state.
c. Differentiation of stem cells into transit amplifying cells.
d. The inability of stem cells to differentiate into adult cells of the same tissue/organ
- Which of the following is NOT CORRECT about animal experiments?
a. Animal experiments are used to help decide whether a particular drug should be tested on people.
b. They eliminate some potential drugs as either ineffective or too dangerous to use on human beings.
c. Animal experiments are used to show that drugs are safe and effective in human beings.
d. If a drug passes the animal test it's then tested on a small human group before large scale clinical trials.

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SECTION "C"

[9 Q. × 5 = 45 marks]

Attempt *ANY NINE* questions.

1. How is ethics different from morality? Explain deontological ethics popularized by Immanuel Kant.
2. What is Casuistry? The Tuskegee Syphilis Experiment is a notorious example of unfair and unethical investigative practices that violated the principle of beneficence. Explain.
3. What is selective abortion? What are the common causes for selective abortion?
4. Write your opinions on making abortion legal for the physical and mental health safety of women.
5. Some investigators conduct research with HESCs obtained from an existing pool of cell lines and play no role in their derivation. What are the different opinions about the moral responsibility to those investigators for the destruction of embryos from which the HESCs they use are derived?
6. What are Induced pluripotent stem cells? Is it possible that induced pluripotent stem cells may ultimately prove sufficient for the research and therapeutic ends?
7. Explain the three Rs that scientists are encouraged to follow to reduce the impact of research on animals.
8. Describe the basic arithmetic analysis of harms caused by doing or not doing animal experiment.
9. What are the different types of patents? What factors determine patent's economic success?
10. Describe the controversy surrounding Taq polymerase enzyme and Polymerase Chain Reaction.

SECTION "D"

[2 Q. × 5 = 10 marks]

Attempt *ALL* questions.

11. Confidentiality plays a critical role in patient care; however, there may be special circumstances where confidentiality must be breached in order to not only ensure the safety of the patient but also to protect third parties. This concept of 'duty to warn' stems from California Supreme Court case of *Tarasoff v. Regents of the University of California* that took place in the 1970s. Explain the case and its implications.

OR

What was Roe v Wade about? How did the case change women's rights?

P.T.O.

12. Read the following case and answer the questions below.

CASE I

Julia is an 18-year-old high school senior with a major depressive disorder. A teacher found her sitting in the school bathroom with an unopened bottle of powerful pain medication for which she does not have a prescription. When the teacher tried to speak with her about what is happening, she insisted, "I wasn't going to do anything. Just leave me alone and pretend this never happened." The school psychologist was called in and after evaluation expressed concerns about possible suicidal ideation. Julia, no longer a minor, did not want her parents called and would not commit to seeing her regular doctor, but reluctantly agreed to see you, a family practitioner certified in adolescent medicine, recommended by the school psychologist. Julia is rude but expressive. She claims treatment for her depression has always caused symptoms worse than the depression, and refuses to consider additional diagnostic tests or treatment options. She insists that though "everyone sometimes thinks of ending it" she wasn't seriously considering suicide.

Suggest a course of action you would like to follow.

OR

CASE II

Call of Duty versus Human Value

Background:

You are a traffic constable and while on duty you see 3 people riding a motorcycle without a helmet and jumping the red signal. On stopping them, you came to know that one of them met with an accident due to potholes and is severely bleeding and due to non-arrival of ambulance they are taking him to the hospital. On further enquiry, you came to know that the driver does not have a driving license and works as day wagger. While on his way to work, he found the man lying injured on the road and in a rush to take him to hospital, he left his helmet on the site of an accident. The driver expresses his financial inability to pay increased fines. Recently, due to the enforcement of new Motor Vehicles Act, you are under severe pressure from your seniors for strict enforcement.

Questions:

- i. What are the ethical issues involved and the options available to you in such a situation?
- ii. Also suggest a course of action you would like to follow.