

**BIOETHICS AND IPR
(HMTS 4203)**

Time Allotted : 3 hrs

Full Marks : 70

Figures out of the right margin indicate full marks.

*Candidates are required to answer Group A and
any 5 (five) from Group B to E, taking at least one from each group.*

Candidates are required to give answer in their own words as far as practicable.

**Group – A
(Multiple Choice Type Questions)**

1. Choose the correct alternative for the following: **10 × 1 = 10**
- (i) Human reproductive cloning is ethically unacceptable at present because of
- | | |
|--------------------------|-----------------------|
| (a) poor risk to benefit | (b) discrimination |
| (c) privacy | (d) all of the above. |
- (ii) Which ethicist asserts “Ethics is not a matter of consequence but of duty”?
- | | |
|--------------------|------------------------|
| (a) Jeremy Bentham | (b) Immanuel Kant, |
| (c) Peter Singer | (d) None of the above. |
- (iii) Committing reckless or careless harm is called
- | | |
|---------------------|-------------|
| (a) non-maleficence | (b) Justice |
| (c) autonomy | (d) rights. |
- (iv) Ethical dilemma between the private interest and the official responsibilities of a person in a position of trust is
- | | |
|--------------------------|-------------------------|
| (a) slippery slope | (b) research misconduct |
| (c) conflict of interest | (d) all of the above. |
- (v) The most important criteria to be followed in Human Research is
- | | |
|--------------------------------|--------------------|
| (a) Institutional Review Board | (b) transparency |
| (c) Voluntary consent form | (d) non-hazardous. |
- (vi) Duty is
- | |
|---|
| (a) a binding obligation out of respect for moral law |
| (b) to increase the general happiness |
| (c) to treat others as a means to an end |
| (d) none of the above. |

- (vii) How many rounds were held by GATT?
(a) 5 rounds (b) 6 rounds
(c) 7 rounds (d) 8 rounds.
- (viii) The term 'Petty Patent' is used for
(a) process patent (b) product patent
(c) utility patent (d) design patent.
- (ix) Xenotransplantation is a
(a) biosafety issue (b) bioethical issue
(c) social issue (d) all of the above.
- (x) In India Seed Policy was Developed in the year
(a) 1998 (b) 2002 (c) 2004 (d) 2000.

Group - B

2. Discuss about Ethical, Legal and Social Issues in Biotechnology (ELSI) on the following:
(i) Gene therapy
(ii) Human Cloning
(iii) Human genome project.
(4 × 3) = 12
3. Write short notes on the following in the context of bioethics:
(i) Write significance of Nazi Human Experimentation and Ten commandments of Nuremberg Code.
(ii) Oath of Hippocrates in English (4th Century BC).
(iii) Dr. Harold Fredrick Shipman's writing of death certificates for his patients.
(3 × 4) = 12

Group - C

4. Describe the biosafety issues for the following cases:
(i) Diamond Vs Chakraborty case (1980)
(ii) Neem patent case (1997)
(iii) Bt Brinjal in India.
4 + 4 + 4 = 12
5. Describe the biosafety issues for the following cases:
(i) Biopiracy
(ii) Tuskegee Syphilis Experiment
(iii) TGN1412 trial.
4 + 4 + 4 = 12

Group - D

6. (a) Describe the concept of infringement in scientific invention.
(b) Explain the differences between industrial design protection and patent.
(c) Describe the need of plant breeder's right in Indian context.
(4 + 4 + 4) = 12
7. (a) Explain different types of drawback of WTO.
(b) What do you mean by MFN and LFN?
(c) What is compulsory licensing?
(d) How is priority date of international patent application determined.
(e) What do you mean by 'state of the art' and 'prior art' in case of patent application.
(2 + 2 + 2 + 2 + 4) = 12

Group - E

8. Write about the following in the context of **bio-entrepreneurship**:
(i) statutory & legal requirements for starting a venture/ company.
(ii) how to write a business plan.
(iii) support mechanism for entrepreneurship in India.
(4 + 4 + 4) = 12
9. (a) Describe the start-up strategies for a biotechnology (BT) company.
(b) Describe the processes for measuring market opportunities for a BT company.
(c) Write short notes on any one of the following entrepreneur in biotechnology
(i) Mr. Ramasami
(ii) Kiran Mazumdar-Shaw.
4 + 4 + 4 = 12