

**BIOETHICS & 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) What ethical theory applies to the statements “Donated organs should be made available to patients on the basis of medical need and not on the basis of social status or other consideration”
 - (a) Justice
 - (b) rights
 - (c) double effect
 - (d) preference utilitarianism.
 - (ii) Genetic enhancement is
 - (a) an IPR
 - (b) a bioethics issue
 - (c) distributive justice
 - (d) all of these
 - (iii) According to the Belmont Report, research involving human subjects demands
 - (a) Informed consent
 - (b) Risk assessment
 - (c) Benefit assessment
 - (d) Subject selection.
 - (iv) Which of the following represents the five forces of competition is proposed by Porter?
 - (a) Competitive rivalry, government policy, buyer power, threat of substitution, threat of new entry
 - (b) Competitive rivalry, supplier power, buyer power, threat of substitution, International competition
 - (c) Competitive rivalry, supplier power, buyer power, threat of substitution, threat of new entry
 - (d) Global rivalry, supplier power, buyer power, threat of substitution, threat of new entry.
 - (v) Which of the following persons can't make an application for a patent as per the Patents Act, 1970?
 - (a) Any person claiming to be the true and first inventor of the invention.
 - (b) Any person interested in the invention
 - (c) Any assignee of the true and first inventor
 - (d) Legal representative of the first inventor

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- (vi) How long from the date of inception will an entity be called as “start up” in India?
(a) Up to 5 years (b) Up to 7 years,
(c) Up to 10 years (d) Up to 12 years.
- (vii) An entrepreneur who enters the market with a product or service offering similar to those existing in the market is called
(a) Innovative entrepreneur (b) Opportunity entrepreneur
(c) Necessaity entrepreneur (d) Replicative entrepreneur.
- (viii) The first patented organism belongs to
(a) Escherichia species (b) Pseudomonas species
(c) Bacillus species (d) Streptococcus species
- (ix) Which intellectual property has indefinite term of protection?
(a) Trade secret (b) patent
(c) Design (d) Trademark
- (x) Which is the nodal centre for Indian biosafety framework?
(a) Dept. of science & Technology
(b) Indian Agriculture Research Institute
(c) Dept. of Biotechnology
(d) Ministry of Environment and Protection.

Group – B

2. (a) State the commandments of the Nuremberg code, Declaration of Helsinki and Belmont report.
(b) What do you understand by Biopiracy?

6 + 6 = 12

3. (a) (i) Discuss about “The responsible conducts of a biotechnologist for the society”.
(ii) Explain the “Ten commandments of Nuremberg code” in the context of biotechnology and its significance.
(b) (i) What is plagiarism? “Plagiarism is the road block in modern biotechnology” - explain with example.
(ii) Discuss ELSI of biopiracy with three examples.

(3 + 3) + (3 + 3) = 12

Group – C

4. (a) “Informed consent is necessary in biotechnological research”, justify this statement with three real examples from biotechnology.
(b) Write short notes on about of the following:
(i) Guidelines of DBT; (ii) Good clinical practice, (iii) Protection of public health.

(3 × 2) + (3 × 2) = 12

5. Write notes on ANY TWO
- (i) convention of biological diversity
 - (ii) Cartagena protocol
 - (iii) Kyoto protocol
 - (iv) Nagoya protocol
 - (v) Different regulatory bodies in India
 - (vi) WTO.

6 + 6 = 12

Group – D

6. (a) (i) Why IP should be protected? (ii) How many types of IPR are there? (iii) Write their names. (iv) Explain the basic principles of geographical indications with two case studies.
- (b) Briefly outline the main features of Indian patent Act of 1970.
- (c) Comment on the major changes in Indian patent system post TRIPS agreement.
7. (a) (i) Define industrial design. How it can be protected? (ii) What is trade mark? How it can be protected? (iii) What are the different types of work covered under copyright?
- (b) (i) What is traditional knowledge (TK)? (ii) “Protection of TK necessary”- explain with two case studies. (iii) What are the different steps are taken by Govt. of India to protect TK?

(1 + 1 + 1 + 3) + 3 + 3 = 12

(2 + 2 + 2) + (1 + 2 + 3) = 12

Group – E

8. (a) (i) Write the names of different business sectors present in biotechnology.
(ii) Discuss the market size for each sectors of biotechnology in India.
(iii) Explain what do you understand by red, white, blue and green biotechnology?
- (b) (i) Write names of five biotechnological products available in the market.
(ii) Write the name of a virtual bioproduct or bioservice of biotechnology by which you want to build your start-up company and give the reason behind your choice.
(iii) Draw the design of the logo or trademark of your virtual bioproduct or bioservice.
(iv) What will be the trade secret of your bioproduct or bioservice?
9. (a) (i) What is bioentrepreneurship? (ii) Why it is important? (iii) Which are the five most important characters necessary to become bioentrepreneur? (iv) Correlate them with an example of a bioentrepreneur from India (other than Kiran Majumdar Shaw).

(2 + 2 + 2) + (1 + 2 + 2 + 1) = 12

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- (b) (i) Write two differences between invention and innovation. (ii) Write about the fundamental ideas for marketing and selling of a bioproduct or bioservice.

$$(1 + 1 + 2 + 3) + (2 + 3) = 12$$

Department & Section	Submission Link
BT	https://classroom.google.com/w/MjQ4NzE4MDU3NjM4/tc/MzU5MzM3NTM5Mzky