

Bioentrepreneurship, IPR and Bioethics
(BIOT 6102)

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)

10 x 1=10

1. Choose the correct alternatives for the following:

(i) In Indian patent law, IPC stands for

- (a) International Patent Classification System
- (b) International propreitory Classification System
- (c) Indian Patent Classification System
- (d) Indian Propreitory Classification System.

(ii) Budapest treaty is intended for

- (a) World's Fastest Trading Opportunity
- (b) Safe use and handling of genetically modified organisms
- (c) International recognition of the deposit of microorganisms for the purposes of patenting
- (d) The Protection of Literary and Artistic Works.

(iii) Research involving human being requires

- (a) informed consent
- (b) consent
- (c) undertaking
- (d) signature and consent.

(iv) Which of the following is not a process patent?

- (a) Multivalent vaccines
- (b) Nucleic acid hybridization assay
- (c) PCR applications
- (d) Applying biofertilizers and bioinsecticides.

(v) Diamond and Chakraborty case was famous for patenting

- (a) Recombinant insulin
- (b) An oil-eating *Pesudomonas* sp
- (c) An attenuated *Escherichia Sp.* Bacteria
- (d) A pathogenic *Salmonella* sp.

- (vi) *Sui generis* deals with
- (a) computer design
 - (b) human cloning
 - (c) drug design
 - (d) drug discovery.
- (vii) Berne Convention is
- (a) for the protection of literary and artistic works
 - (b) for the protection of developing countries from the hazards produced in Annex I countries
 - (c) for the prevention of organized policy
 - (d) for the protection of nature from anthropogenic hazards.
- (viii) WTO stands for
- (a) World's Fastest Trading Opportunity
 - (b) World Fair Trade Opportunity
 - (c) World Fair Trade Organization
 - (d) World's Fastest Trading Organization.
 - (e)
- (ix) GATT was implemented in India in
- (a) 2001 (b) 2002 (c) 2003 (d) 2004.
- (x) A trade secret may be
- (a) Word (b) Symbol (c) Punishable information (d) Logo.

Group - B

- 2.(a) Discuss the ethical, legal and social issues related to genetic information generated by healthcare providers.
- (b) How do you think GM crops would be able to solve the problem of food security in India?
- 6 + 6 = 12**
- 3.(a) Explain the ethical and policy issues related to human germline gene therapy.
- (b) What do you mean by Eugenics?
- (c) Briefly explain the judgement by US Supreme Court on gene patenting.
- 6 + 2 + 4 = 12**

Group - C

- 4.(a) What do you mean by Intellectual Property?
- (b) What are the basic differences between Industrial Design and Patents?

- (c) What were the recommendations of the Paris Convention for the Protection of Industrial Property (1883)?

3 + 3 + 6 = 12

- 5.(a) What do you mean by Prior art?

- (b) What is protected under G.I.?

- (c) Briefly describe the procedure of filing an Indian patent application.

- (d) Discuss the impact of TRIPS-GATT agreement on Indian patent laws.

2 + 2 + 4 + 4 = 12

Group - D

- 6.(a) Write short notes on *any one of the following*:

- i) Cartagena protocol on Biosafety (2000)
- ii) Declaration of Helsinki (1964)
- iii) Nuremberg Code.

- (b) Elucidate on the Indian Recombinant DNA Safety Guidelines and Regulations followed by GEAC for large-scale experiments, production and manufacture of biologicals.

6 + 6 = 12

- 7.(a) Discuss the ICMR guidelines on research on biomedical subjects. What are the guidelines to be followed for an informed consent?

- (b) What are the safety assessment protocols followed for toxicity studies on foods derived from genetically engineered plants?

(4 + 4) + 4 = 12

Group - E

- 8.(a) How will you measure market opportunities for an entrepreneurship development?

- (b) Comment on the economic factors affecting entrepreneurial development.

- (c) What are the salient features for a strategy development for start-ups?

4 + 4 + 4 = 12

- 9.(a) Comment on the role played by universities and research institutes in entrepreneurship development.

- (b) Analyze the role of technology and upgradation in entrepreneurship development.

- (c) What are the support mechanisms for entrepreneurship in India?

4 + 4 + 4 = 12