

M.TECH/BT/3<sup>RD</sup> SEM/BIOT 6102/2017  
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)**

1. Choose the correct alternative for the following: **10 × 1=10**
- (i) To be patented, an invention must be  
(a) non-obvious (b) useful  
(c) novel (d) all of the above.
- (ii) Who can challenge the issue of a patent?  
(a) Business Competitors  
(b) The inventor's partners or employees  
(c) Anyone  
(d) Federal Government.
- (iii) The term 'Intellectual Property Rights' covers  
(a) copyrights (b) know-how  
(c) trade dress (d) all of the above.
- (iv) BERN convention (1886) is concerned with:  
(a) translations (b) copyright  
(c) patent (d) standards.
- (v) Trade mark  
(a) is represented graphically.  
(b) is capable of distinguishing the goods or services of one person from those of others.  
(c) may include shapes of goods or combination of colours.  
(d) all of the above.

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- (vi) The historically first international guideline pertaining to research involving human participants was the  
(a) declaration of Helsinki (b) declaration of Japan  
(c) Nuremberg Code (d) WHO Ethical Guideline.
- (vii) Which of the following is (are) included in Geographical indications of Goods?  
(a) Handicraft (b) Foodstuff  
(c) Manufactured (d) All of the above.
- (viii) 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 protection of organized policy  
(d) for the protection of nature from anthropogenic hazards.
- (ix) Golden Rice is  
(a) invented in India  
(b) aimed to protect Indian from food deprivation  
(c) patented  
(d) copyrighted.
- (x) A patent in India is valid for  
(a) 10 years (b) 15 years  
(c) 20 years (d) 25 years.

**Group - B**

2. (a) Describe the different types of Environmental Ethical Principles.  
(b) What are the three main types of cloning?  
(c) What are telomeres and describe how shortening of length of a chromosome is dependent on telomere length?  
**6 + 3 + 3 = 12**
3. (a) What is bioethics?  
(b) Describe in detail the Belmont Report.

(c) Write short notes on:

- (i) Utilitarianism
- (ii) Deontology

**4 + 4 + 4 = 12**

**Group - C**

4. (a) What is a patent? Describe its unique characteristics.

(b) Explain the two types of patents.

**2 + 6 + 4 = 12**

5. (a) What is the Biodiversity act?

(b) What is the definition of Traditional knowledge (TK).

(c) What are the characteristics and role of TK.

**4 + 4 + 4 = 12**

**Group - D**

6. (a) Discuss the highlights of Declaration of Helsinki regarding medical experimentation on human beings.

(b) What was the purpose of setting up the DBT?

**6 + 6 = 12**

7. (a) Comment on the guidelines followed by WHO on Biosafety and rDNA technology.

(b) Discuss the role of Institutional Biosafety Committee (IBSC) in monitoring safety guidelines in Biotechnology research.

(c) What is the role of Review Committee on Genetic Manipulation (RCGM) in Genetics research.

**4 + 4 + 4 = 12**

**Group - E**

8. (a) What is the ideal role of an entrepreneur in economic development?

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

(c) What should be the strategic principles for the development of a startup?

**4 + 4 + 4 = 12**

9. (a) How do the knowledge centres help in entrepreneurship development?

(b) How do you think the upgradation of technology is playing a booster role in entrepreneurship development?

(c) Discuss the ways of managing technology transfer in an entrepreneurial set-up.

**4 + 4 + 4 = 12**