

(7 pages)

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M.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2025.

Second Semester

Microbiology

Elective IV – BIOSAFETY , BIOETHICS AND IPR

(For those who joined in July 2023 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (15 × 1 = 15 marks)

Answer ALL questions.

Choose the correct answer :

1. Where is the headquarters of WIPO?
 - (a) Geneva, Switzerland
 - (b) London, UK
 - (c) Delhi, India
 - (d) Stockholm, Sweden

2. _____ is the right granted by a government to an inventor to prevent others from the commercial use of his invention.
 - (a) Piracy
 - (b) Ethics
 - (c) Biosafety
 - (d) Patents
3. Which international agreement primarily deals with trade in goods?
 - (a) TRIPS
 - (b) WIPO
 - (c) GATT
 - (d) Berne convention
4. Which international convention specifically focuses on patents?
 - (a) Paris Convention
 - (b) Berne Convention
 - (c) Kyoto Protocol
 - (d) Geneva Convention
5. Various measures taken to prevent any risks to normal organisms from transgenic organisms are known as _____.
 - (a) biosafety
 - (b) patent
 - (c) bio-patent
 - (d) bio-piracy

6. Rights of patentee are infringed by supplying substance commercially in _____.
- (a) Process patent (b) Product patent
(c) Commercial patent (d) National patent
7. Who are the major sufferers of bio-patents?
- (a) Traditional users
(b) Traditional knowledge
(c) Bioresources of the country of origin
(d) Farmers
8. GEAC is setup by _____ government.
- (a) Indian (b) American
(c) Israel (d) Australian
9. India alone has _____ varieties of rice.
- (a) 100,000 (b) 200,000
(c) 20,000 (d) 10,000
10. _____ standards are required to evaluate the morality of all human activities.
- (a) Pathological (b) Social
(c) Ethical (d) Psychological

11. GEAC makes decisions regarding the validity and the safety of _____ organisms.
- (a) genetically modified
(b) dead
(c) damaged
(d) infected
12. Genetically modified (GM) crops can be produced by
- (a) recombinant DNA technology
(b) somatic hybridization
(c) cross breeding
(d) micropropagation
13. Which of the following methodology is used to identify all the genes that are expressed as RNA in Human Genome Project (HGP)?
- (a) Sequence Annotation
(b) Expressed Sequence Tags
(c) Karyotyping
(d) Ammonification

14. Which of the following is a suitable host for the process of cloning in Human Genome Project (HGP)?
(a) Virus (b) All types of fungi
(c) Bacteria (d) Protozoan
15. Which of the following is a suitable vector for the process of cloning in Human Genome Project (HGP)?
(a) PAC (Protozoal Artificial Chromosomes)
(b) FAC (Fungal Artificial Chromosomes)
(c) VAC (Viral Artificial Chromosomes)
(d) YAC (Yeast Artificial Chromosomes)

PART B — (5 × 4 = 20 marks)

Answer ALL questions by choosing either (a) or (b).
Each answer should not exceed 250 words.

16. (a) Analyse the patent terminology.
Or
(b) Categorize the patent life and geographical boundaries.
17. (a) Choose an appropriate method to file the patent.
Or
(b) Identify an online tools for patent search.

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18. (a) Inference the concept of patent Act 1970.
Or
(b) Function of uniform global patent system.
19. (a) List out the principles and applications of bioethics.
Or
(b) Choose an appropriate methods to conserve natural biodiversity.
20. (a) Functions of bioethics in medicine.
Or
(b) Outline the principles of stem cell research.

PART C — (5 × 8 = 40 marks)

Answer ALL questions by choosing either (a) or (b).
Each answer should not exceed 600 words.

21. (a) Interpret the different forms of Intellectual property rights and their importance to industry and academic.
Or
(b) Discuss about the international organization and IPR.

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22. (a) Describe the detail process involved in patenting.

Or

(b) Explain the principles and methods of patent search, patent databases and libraries.

23. (a) Discuss the principles and techniques involved in biotechnological inventions in India.

Or

(b) Analyze the tentative harmonization efforts and implications of setting up a uniform world patent system.

24. (a) Explain the need of bioethics, applications and issues related to bioethics.

Or

(b) Discuss the issues related to genetically modified foods and food crops.

25. (a) Elaborate notes bioethics and cloning.

Or

(b) Evaluate the human genome project and its importance.