

2053

M.Sc. (Biotechnology) Fourth Semester
MBIO-403: Intellectual Property Rights, Bio-safety and Bioethics

Time allowed: 3 Hours

Max. Marks: 80

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting one question from each Unit.

X-X-X

1. Attempt the following:-

(8x2)

- Which IPRs in India covers: i) mere new design of a fermenter and ii) New plant variety?
- Which IPR is covered under Madrid and Paris Convention and In which year the convention came into effect?
- What are related rights?
- Which types of plants are protected under PVPA and in what form protection is provided?
- What are the major functions of EPA?
- Give the two conditions for protection of a Geographical Indication?
- What is disclosure requirement in patent specifications?
- Give the two major amendments made in Indian Patent act 2005?

UNIT- I

- a) A scientist develops a new method of production of a r-DNA modified laccase enzyme in a genetically engineered *E.coli* for degrading lignin during processing in paper industry. He also designed a new fermenter for enhanced production of the enzyme with a working manual. He named the recombinant enzyme with enhanced efficiency as "LACZYME". Enlist the IPRs under which all of his inventions can be protected with justification for each? 6
b) Under Indian Patent Act Section 3 enlist six inventions that are non patentable? 6
c) Give the features of Trademark and give its importance? 4
- a) Discuss the basic requirements of patentability and patentable subject matter under TRIPs (article 27)? 6
b) Discuss how complete Patent specifications are written and filed? 6
c) What are "mailbox" or "Blackbox" applications and why are they so called? What was Exclusive Marketing Rights? 4

UNIT- II

- a) Give an account of the impact and post events of Chakrabarty vs. Diamond decision on Biotechnology inventions and patent status, especially? 6
b) What are depositories? Discuss the role of IDA, how does it work and its importance in relation to biotechnology patents? 6

- c) Give the difference between PPA and Utility patents? 4
5. a) What do you understand by patent infringement? Give the procedural aspects of patent litigation with example of any biotechnology patent? 6
- b) Discuss the role of collaborative research and technology transfer? 6
- c) Describe the steps involved in filing patent through PCT? Is PCT the patent granting agency? 4

UNIT- III

6. a) Explain with the help of any case study from developing or developed countries, what are the major issues in public acceptance for biotechnology related products and their use? 8
- b) Using SWOT analysis give an account of challenges for Indian Biotechnology research and industries? 8
7. a) Discuss the status of Biotechnology patenting in developing and developed countries? 8
- b) Define Bioethics? Give an account of ethical implications of various fields of Biotechnology on the society? 8

UNIT- IV

8. a) Discuss the role of DBT and GEAC regulatory authorities in India? 8
- b) Discuss the role of EPA and USDA as regulatory bodies in the environmentally responsible use of biotechnology? 8
9. a) Mention the main objectives of Cartagena Protocol on Biosafety? What are the main features of AIA? 8
- b) What is Biosafety management? How is Biosafety management used as a key to environmentally responsible use of biotechnology? 8