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| **Name:**<br>**Enrolment No:** | |

**UPES**

**End Semester Examination, May 2025**

**Course: Biotechnology And Patenting Of Life Forms** **Semester: II**

**Program: LL.M. IPR** **Time : 03 hrs.**

**Course Code: CLIR7002** **Max. Marks: 100**

**Instructions:** All questions are compulsory and support with provisions and cases.

**SECTION A**
**(5Qx2M=10Marks)**

| S. No. | Statement of question | Marks | CO |
|---|---|---|---|
| Q 1 | What is Green Biotechnology? | **2** | **CO1** |
| Q 2 | Define Biotechnological Processes. | **2** | **CO1** |
| Q 3 | Explain EPO norms for patentability of biotechnology. | **2** | **CO1** |
| Q 4 | How biotechnological patenting raises the concern of Socio-economic issues. | **2** | **CO1** |
| Q 5 | When an adult human DNA cloning is patentable under TRIPS. | **2** | **CO1** |

**SECTION B**

**(4Qx5M= 20 Marks)**

| | Statement of question | Marks | |
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| Q 6 | Describe CRISPR and Gene Editing patenting debates. | **5** | **CO 2** |
| Q 7 | Elucidate the ethical issues with Consumption of GMOs crops and food products. | **5** | **CO 2** |
| Q 8 | Explicate the case of Dimminaco AG v. Controller of Patents (Cal HC decision 2002) | **5** | **CO 2** |
| Q 9 | Discuss the inventions that are **Not** Patentable in India? | **5** | **CO 2** |

**SECTION-C**

**(2Qx10M=20 Marks)**

| | Statement of question | Marks | |
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| Q 10 | Analyse the Patentability of Biotechnology under TRIPS Article 27 read with Article 53 of EPO. | **10** | **CO 3** |

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| Q 11 | Explicate the role of Budapest Treaty. Is there any International Depository Authority in India pertaining to microorganism that are being applied for patents in India. Explain the obligation to Patenting of Micro-organisms under national and internation law. | **10** | **CO 3** |
| **SECTION-D**<br>**(2Qx25M=50 Marks)** | | | |
| | Statement of question | **Marks** | |
| Q 12 | Sumit has innovated a transgenic Mustard that has the capacity to cure the deficiency of Vitamin A, D and E, as it's the modification done through using microbiological process in Chandigarh in the Agricultural Institute. As per Sumit specification for the patenting that he had submitted to the Delhi patent office, he had provided that the mustard is transgenic in nature and complies with all the aspects of patentability. On the other hand, Rajasthan, Madhya Pradesh, Uttar Pradesh, and Haryana, being major producers significantly grown in winter oilseed crop in India, particularly during the Rabi season (November-March), who are biggest producer of mustards that has inbuilt Vitamin A, D and E components include yellow mustard, brown mustard, black mustard, and numerous other types with distinct flavors and uses found in all the varieties of mustard in some quantities. Based on the above facts answer the following.<br>a. Whether Sumit patent could be challenged on the national and international patent norms and standards? Justify with relevant cases and provisions. **(10 marks)**<br>b. Critically scrutinize the provisions for patenting innovation through microbiological process for patenting of plants that are modified through genetic engineering or genetic modification, on what grounds would the patent be rejected of Sumit? Substantiate the grounds of patentability of transgenics plants through genetic modification with relevant cases. **( 15 Marks)** | **25** | **CO4** |
| Q 12 | Leguminous plants are able to take nitrogen from the air and fix it in the plant for conversion to organic nitrogenous compounds. The ability of these plants to fix nitrogen from the air depends on the presence of bacteria of the genus Rhizobium which infect the roots of the plant and form nodules on them. These | | |

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| | root nodule bacteria of the genus Rhizobium fall into at least six species. No one species will infect the roots of all species of leguminous plants. But each will infect well defined groups of those plants. Each species of root nodule bacteria is made up of distinct strains which vary in efficiency. Methods of selecting the strong strains and of producing a bacterial culture from them have long been known. The bacteria produced by the laboratory methods of culture are placed in a powder or liquid base and packaged for sale to and use by agriculturists in the inoculation of the seeds of leguminous plants. This has long been well known, it was the general practice, prior to the Mr. Benny patent, to manufacture and sell inoculants containing only one species of root nodule bacteria. Thus, if a farmer had crops of clover, alfalfa, and soybeans, he would have to use three separate inoculants. Mr. Benny discovered that there are strains of each species of root nodule bacteria which do not exert a mutually inhibitive effect on each other. He also ascertained that those mutually noninhibitive strains can, by certain methods of selection and testing, be isolated and used in mixed cultures. Thus, he provided a mixed culture of Rhizobia capable of inoculating the seeds of plants belonging to several cross-inoculation groups. It is the product claims which disclose that mixed culture. Based on the above facts answer the following question-<br>**a.** Guidance can be taken from patents that have been granted earlier and can it be otherwise too difficult to draw a plain line of difference and arrive at a straitjacket formula to grant a patent in the above matter. Validate with relevant provisions of Indian patent law**. (10 Marks)**<br>b. Can it be shown that when viewed as a whole component, an application incorporates a discovery within it can bring about a technical change, it may be patentable based on the provisions of TRIPS of MR. Benny. Explain the resembling case**. (15 Marks)** | **25** | **CO4** |