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GIET UNIVERSITY, GUNUPUR - 765022
M. Sc. (Third Semester) Examinations, December - 2023
22BTPC304 - Intellectual Property Rights, Biosafety and Bioethics
(Biotechnology)

Time: 3 hrs

Maximum: 70 Marks

(The figures in the right hand margin indicate marks.)

PART - A**(2 x 10 = 20 Marks)**

| Q.1. Answer <i>ALL</i> questions | CO # | Blooms Level |
|--|------|-----------------|
| a. Write the full form of GATT, WTO, WIPO and TRIPS. | CO1 | K2 |
| b. What is biopiracy? | CO5 | K1 |
| c. What do you mean by “prior art” in the context of patents? | CO1 | K1 |
| d. What is a patent database? Give two examples. | CO1 | K1 |
| e. What are the basic requirements for patenting? | CO2 | K2 |
| f. What is patent infringement? | CO2 | K1 |
| g. What do you mean by royalty in patent? | CO2 | K1 |
| h. Differentiate between transgenic and cis-genic crop plants. | CO3 | K3 |
| i. What are the different available modern genome editing tools? | CO3 | K2 |
| j. What kind of environmental risk may be happened due to GMO crops? | CO5 | K3 |

PART - B**(10 x 5 = 50 Marks)**

| <u>Answer <i>ANY FIVE</i> questions</u> | Marks | CO # | Blooms Level |
|---|-------|------|-----------------|
| 2. a. What are the different kinds of issues that can happen in the field of biotechnology? | 3 | CO1 | K2 |
| b. How does IP solve these issues in the biotechnology field? Give a no. of case studies. | 7 | CO1 | K2 |
| 3.a. What is the importance of a patent database? | 3 | CO1 | K2 |
| b. How can analysis and report formation be done from the patent database? | 7 | CO1 | K3 |
| 4. a. What is patent infringement? | 2 | CO2 | K1 |
| b. Describe the scope, litigation and case studies on patent infringement. | 8 | CO2 | K2 |
| 5.a. What are GMOs and LMOs? | 2 | CO3 | K1 |
| b. Write an essay on the risk assessment of transgenic plants. | 8 | CO3 | K3 |
| 6. a. What is the importance of Bioethics in research? | 3 | CO5 | K2 |
| b. How does bioethics solve the issues in cloning and stem cell research, human | 7 | CO5 | K3 |

and animal experimentation?

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|-------|--|---|-----|----|
| 7.a. | What is bio-piracy? What are its adverse effects on available biological resources? | 3 | CO5 | K2 |
| b. | With some case studies, describe the national and international ways of preventing bio-piracy. | 7 | CO5 | K3 |
| 8. a. | What are bio-safety levels? | 2 | CO3 | K1 |
| b. | Describe the instrumentation and use of different types of bio-safety cabinets. | 8 | CO3 | K2 |