Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Nov/Dec – 2017**

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| **Code :** | **14BT2012** | **Duration :** | **3hrs** |
| **Sub. Name :** | **GENETIC ENGINEERING AND BIOETHICS** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. |  | Discuss in detail about modifying enzymes used for the development of recombinant DNA with respective examples. | CO1 | 20 |
| (OR) | | | | |
| 2. | a. | Write a note on Blunt and Sticky end molecule and discuss about Linkers and Adapters with examples. | CO1 | 15 |
| b. | Describe Homopolymer Tailing. | CO1 | 5 |
|  |  |  |  |  |
| 3. | a. | Describe the characteristics of Plasmid and usefulness as vectors. | CO2 | 5 |
|  | b. | Discuss the genome and screening of recombinant molecule using PUC 8 vectors. | CO2 | 15 |
| (OR) | | | | |
| 4. | a. | Discuss about pGEM3Z vector genome and write a note on i*n vitro* RNA Synthesis. | CO2 | 10 |
|  | b. | Describe the genome of M13 Vector and explain the construction of M13mp1 and M13mp2 from the wild type M13 genome. | CO2 | 10 |
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| 5. |  | Describe the importance of RFLP and write a detailed note on Southern Blotting technique. | CO2 | 20 |
| (OR) | | | | |
| 6. | a. | Interpret about Homologous recombination for gene knock out and Knock in. | CO2 | 10 |
|  | b. | Discuss in detail about FISH. | CO2 | 10 |
| 7. |  | Discuss the physical and chemical methods involved for the transfection process in rDNA technology. | CO2 | 20 |
| (OR) | | | | |
| 8. | a. | Write detailed note on Polymerase Chain Reaction discuss the role of chemicals and steps involved. | CO2 | 10 |
|  | b. | Discuss about the types of PCR and its uses. | CO2 | 10 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | Explain in detail about Transgenic Animals with examples. | CO3 | 10 |
| b | Enumerate about the ethical issues in Genetic Engineering applications. | CO3 | 10 |

ALL THE BEST