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 – April/May – 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. |  | Explain in detail about the Type I and Type II restriction enzymes with necessary examples. | CO1 | 20 |
| (OR) | | | | |
| 2. |  | Write a detailed note on end modifying enzymes with examples. | CO1 | 20 |
|  |  |  |  |  |
| 3. | a. | Write the characters of a plasmid vector. | CO2 | 10 |
|  | b. | Discuss the importance of cloning and write a note on shuttle vector | CO2 | 10 |
| (OR) | | | | |
| 4. | a. | Describe about Blue and White screening method with example. | CO2 | 10 |
|  | b. | Write a detailed note on wooden block technique used to identify the clones . | C02 | 10 |
|  |  |  |  |  |
| 5. | a. | Write the necessary chemicals and buffers required for the Polymerase Chain Reaction and discuss its role and importance during the process of amplification. | CO3 | 10 |
|  | b. | Write the different steps involved and the process in the PCR program. | CO3 | 10 |
| (OR) | | | | |
| 6. |  | Describe about the physical and chemical Transfection methods involved for the transfer of genes. | CO2 | 20 |
|  |  |  |  |  |
| 7. |  | Explain the role of transgenic science used for plant improvement. | CO3 | 20 |
| (OR) | | | | |
| 8. |  | Discuss in detail about Gene knock out and gene knock in methods used for the development of transgenic animals. | CO3 | 20 |
|  | | **Compulsory**: |  |  |
| 9. |  | Discuss in detail about Gene Therapy and its applications in Human diseases and write a note on ethical issues in gene therapy. | CO2 | 20 |

ALL THE BEST