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**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

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

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

**End Semester Examination – Nov/Dec - 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **12BT216** | **Duration :** | **3 hrs** |
| **Sub. Name :** | **Genetic Engineering and Bioethics** | **Max. marks :** | **100** |

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| **Q. No.** | **Questions** | **Marks** |
| **PART-A(10X1=10 MARKS)** | | |
| 1. | Type II restriction enzymes do not require ATP. (True/False) | (1) |
| 2. | A break in the phosphodiester bond of DNA sealed by the enzyme -----. | (1) |
| 3. | Expand pBR322 & pUC19. | (1) |
| 4. | The Ribosome Binding Site (RBS) for prokaryotes is called. | (1) |
| 5. | RFLP stands for ---. | (1) |
| 6. | How many primers are used in a PCR tube during RAPD? | (1) |
| 7. | The process or method of transfer naked DNA to bacteria is called -----------. | (1) |
| 8. | The enzyme that converts mRNA to cDNA is -----------. | (1) |
| 9. | Production of biomolecules from GMO beyond---liters is considered Large scale. | (1) |
| 10. | List the three elements of containment. | (1) |

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| **PART B(5 X 3= 15 MARKS)** | | |
| 11. | Differentiate the types of hybridization used for RNA, DNA and Proteins. | (3) |
| 12. | Describe the class of vectors that are used to transfer DNA between different species. | (3) |
| 13. | Write a short note on Random Amplified Polymorphic DNA. | (3) |
| 14. | Tabulate the differences between genomic library and cDNA library. | (3) |
| 15. | What is the Scope and functions of Recombinant DNA Advisory Committee (RDAC). | (3) |

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| **PART C(5 X 15= 75 MARKS)** | | | |
| 16. |  | Define restriction enzyme and describe in detail their classification. | (15) |
| (OR) | | | |
| 17. |  | Explain in detail the western blotting technique**.** | (15) |
| 18. | a. | Write the features an ideal cloning vector. | (5) |
| b. | You have to clone a DNA fragment of about 3Kb and you have a choice of two cloning vectors pBR322 and pUC19 .What will be your choice, substantiate. | (10) |
| (OR) | | | |
| 19. |  | Explain elaborately on phage derived cloning vectors. | (15) |
| 20. |  | Explain the mechanism of Polymerase Chain Reaction (PCR). | (15) |
| (OR) | | | |
| 21. |  | Describe quantitative/Real Time-PCR in detail. | (15) |
| 22. |  | Explain in detail the technique used to clone the genes expressed in eukaryotic cells. | (15) |
| (OR) | | | |
| 23. |  | Describe the various methods by which DNA can be introduced in to cells**.** | (15) |
| 24. |  | Elaborate on the stipulated guidelines on rDNA research activities. | (15) |
| (OR) | | | |
| 25. |  | Define bio-safety level and explain in detail the types of bio-safety levels. | (15) |

ALL THE BEST