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 :** | **14BI2003** | **Duration :** | **3hrs** |
| **Sub. Name :** | **MOLECULAR BIOLOGY AND GENETIC ENGINEERING** | **Max. marks :** | **100** |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. |  | Describe the experiments that proved “DNA is the genetic material”. | CO1 | 20 |
| (OR) | | | | |
| 2. | a. | Describe the process of bacterial conjugation. | CO1 | 10 |
|  | b. | Differentiate generalized and specialized transduction in bacteria. | CO1 | 10 |
|  |  |  |  |  |
| 3. | a. | Discuss the enzymes required for bacteria to multiply. | CO1 | 10 |
|  | b. | Illustrate the types of DNA replication in bacteria. | CO1 | 10 |
| (OR) | | | | |
| 4. | a. | Explain the types of Eukaryotic DNA polymerases. | CO1 | 10 |
|  | b. | Describe the process of replication in Eukaryotic cells. | CO1 | 10 |
|  |  |  |  |  |
| 5. | a. | Describe the process of converting a DNA sequence to mRNA. | CO2 | 15 |
|  | b. | Explain the changes that happen to a premature mRNA. | CO2 | 5 |
| (OR) | | | | |
| 6. |  | Give details about protein formation from mRNA. | CO2 | 20 |
|  |  |  |  |  |
| 7. | a. | Describe the requirements of a PCR experiment. | CO3 | 10 |
|  | b. | Illustrate the process of amplifying DNA using a PCR. | CO3 | 10 |
| (OR) | | | | |
| 8. | a. | Describe the types of restriction enzymes used in cloning. | CO3 | 10 |
|  | b. | List the types of vectors used in cloning with emphasis on plasmids. | CO3 | 10 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. |  | Discuss “gene therapy as a cure” and its ethical implications. | CO3 | 20 |

ALL THE BEST