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

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

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| **Code :** | **14BT3006** | **Duration :** | **3hrs** |
| **Sub. Name :** | **ADVANCES IN RECOMBINANT DNA TECHNOLOGY** | **Max. marks :** | **100** |

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

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| **Q. No** | **Sub Div** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Define rDNA Technology. | CO1 | 2 |
| b. | Summarize the scope and applications of rDNA technology. | CO1 | 3 |
| c. | Explain PCR, types of PCR and the different stages involved in it with a neat sketch. | CO1 | 15 |
| (OR) | | | | |
| 2. | a. | Mention different enzymes used in Genetic Engineering and enumerate its role. | CO1 | 10 |
|  | b | Illustrate the Agarose Gel Electrophoresis with a neat sketch. | CO1 | 10 |
|  |  |  |  |  |
| 3. |  | Narrate the following:   1. Plasmid vector. 2. Cosmid vector. 3. Bacterial Artificial Chromosome (BAC). 4. Yeast Artificial Chromosome (YAC). 5. Bacteriophage. | CO2 | 4  4  4  4  4 |
| (OR) | | | | |
| 4. | a. | Demonstrate the isolation and manipulation of nucleic acids. | CO2 | 10 |
|  | b. | Explain the components of Ti plasmid and their uses in genetic engineering. | CO2 | 10 |
|  |  |  |  |  |
| 5. |  | Explain the following methods of gene transfer.  i. Electroporation. ii. Microinjection. iii. Particle Bombardment method. iv. Sonoporation. v. Transformation and Conjugation. | CO2 | 4+4  4+4+4 |
| (OR) | | | | |
| 6. | a. | Illustrate Transgenic plants and Transgenic animals. | CO3 | 10 |
|  | b. | Distinguish Gene knock out and knock in Technology. | CO2 | 5 |
|  | c. | Enumerate the applications of genetic engineering in medicine, Agriculture and Industry. | CO3 | 5 |
|  |  |  |  |  |
| 7. | a. | State Human genome project? | CO3 | 2 |
|  | b. | Mention the systematic steps in Human genome project. | CO3 | 8 |
|  | c. | Add a note on Human genome project uses/applications. | CO3 | 10 |
| (OR) | | | | |
| 8. |  | Summarize the different forensic applications of r DNA technology. | CO3 | 20 |
|  | |  |  |  |
|  | | **Compulsory:** |  |  |
| 9. | a. | What is gene therapy? | CO3 | 2 |
|  | b. | Write the different types of gene therapy. | CO3 | 8 |
|  | c. | Add note on its advantages and disadvantages. | CO3 | 10 |

ALL THE BEST