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**GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR
(GIET UNIVERSITY)**



Ph.D. (First Semester) Examinations, December – 2024

**23SPPEBT1011/23SPPEBTS1011- Advanced Biotechnology
(Biotechnology, Biotechnology (SoS))**

Time: 3 hrs

Maximum: 70 Marks

The figures in the right hand margin indicate marks.

Answer ANY FIVE Questions.

(14 x 5 = 70 Marks)

Marks

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| 1.a. Write in details about the Ramachandran Plot with its significance. | 8 |
| b. Discuss the various types of non-covalent bonds responsible for protein stabilization. | 6 |
| 2. Explain detail about the secondary and tertiary structure of protein and its significance. | 14 |
| 3.a. Write the principle of X-Ray Crystallography and how it is used in determine protein structure. | 7 |
| b. Discuss the principle, instrumentation and applications of UV-Vis Spectroscopy. | 7 |
| 4. Write the principle, instrumentation and applications of HPLC. | 14 |
| 5.a. Describe the detail about anaerobic digestion system. | 7 |
| b. Mention in details about the various methods of disinfection of water. | 7 |
| 6.a. Explain Restriction Enzyme (R.E), its nomenclature and types. | 7 |
| b. Write on Yeast Artificial Chromosome and its uses. | 7 |
| 7. Give a detail steps of r-DNA Technology and its applications. | 14 |
| 8.a. Give a detail account on nutritional requirement of animal cells. | 7 |
| b. Write on growth kinetics and doubling of animal cell. | 7 |

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