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The Assam Royal Global University, Guwahati

Royal School of Life Sciences
B.Sc. Zoology, 6th Semester
Semester End Examination, June 2023
Course Title: Biotechnology
Course Code: ZOO142C602

Time: 3 Hours

Maximum Marks: 70

Section – A

1. Attempt **all** questions. (Maximum word limit 50) 2 x 8
- What is star activity of restriction enzyme?
 - What is scorable marker gene?
 - Name one microbe used in preparation of wine.
 - What is lag phase.
 - What is the importance of Taq polymerase?
 - Mention the role of buffer in PCR.
 - What is proteomics?
 - What do understand by ESI in Mass Spectroscopy.

Section – B

2. Attempt **any one** of the following: 12 x 1
- Describe the structure of PUC18 and explain how the recombinants are screened.
 - What are the basic characteristics of a vector? Explain all the characteristics with suitable examples.
3. Attempt **any two** of the following: 7 x 2
- Explain up-stream and down-stream processing in industrial processes.
 - Describe the designing of a fermenter with proper labelled diagram.
 - Explain the role of various enzymes used in food processing industries.
4. Attempt **any two** of the following: 7 x 2
- Mention the steps and various components of PCR? Write the types of PCR and its application?
 - Why AFLP is considered as dominant marker? Write the advantages and disadvantages of AFLP.
 - What is the principle and working steps of Southern blotting?
5. Attempt **any two** of the following: 7 x 2
- Explain the principle and process of ion exchange chromatography with diagram.
 - Explain the zone of equivalence in context to immunoprecipitation and its significance.
 - Describe the process of 2D Gel electrophoresis blotting with diagram.