



**The University of Burdwan**  
**B.Sc. Semester-III Examinations 2020 (CBCS)**  
**Subject- Biotechnology**  
**Paper- SEC - 1 (Molecular Diagnostics)**

**Time- 2 hrs**

**Marks: 40**

**Answer any eight questions from the following :**

**5 x 8 = 40**

1. What is RFLP ? Write down the applications of RFLP. (2+3 =5)
2. Differentiate between Homogeneous and Heterogeneous enzyme immunoassays. Name one solid phase used in enzyme immunoassay. (4+1=5)
3. What is polyclonal antibody? Write down the uses of monoclonal and polyclonal antibodies in enzyme immunoassays. (2+3=5)
4. Explain Sandwich ELISA in brief with a neat diagram. (5)
5. Explain the working procedure Radio Immuno assay. (5)
6. Write down the immunoblotting technique. (5)
7. What are the applications of enzyme immunoassays in the field of diagnostic microbiology (5)
8. Write a short note on Nuclear Hybridisation technique. (5)
9. Briefly describe the applications of polymerase chain reaction. (5)
10. Differentiate competitive and noncompetitive immunoassay with an example each. (5)



**The University of Burdwan**  
**B.Sc. Semester-III Examinations-2020**  
**Subject- Biotechnology**  
**Paper- SEC- 1 OR (Industrial Fermentations)**

**Time: 2 hrs**

**Full marks :40**

**Answer any eight questions from the following:**

**5 x 8 = 4**

1. Write short note on whole cell immobilization. What are the advantages of immobilization technique? 5
2. What are secondary metabolites? Write down the production and extraction steps of penicillin fermentation. 5
3. "Microbial transformation of steroids are different from traditional fermentation"-why? What are ergot alkaloids? 5
4. What factors should be kept in mind while choosing the extraction method of industrial biochemicals? Define the term fermentation in context of Industrial Biotechnology. 5
5. Write short notes on various digesters for biogas production. 5
6. Define biodiesel. What are the possible sources of biodiesel production? Give an example. 5
7. Highlight the features of hydrogen as a fuel. What are energy crops? 5
8. What are the strategies of starch modification? Write down various applications of modified form of starch in food and other industries. 5
9. Write down the features on an ideal antifoam agent. Why they are required during fermentation process? 5
10. What is upstream process of fermentation? Write down the importance of quality control and research-development in upstream process of an industrial product. 5

