**ST. JOSEPH’S COLLEGE (AUTONOMOUS), BENGALURU-27**

**B.Sc. BIOTECHNOLOGY - VI SEMESTER**

**SEMESTER EXAMINATION: APRIL 2022**

**(Examination conducted in July 2022)**

**BT 6118: Entrepreneurship, Industrial and Medical Biotechnology**

**Time: 2.5 Hrs Max Marks: 70**

**Note: The question paper has THREE parts and ONE printed page**

1. **Answer *ANY TEN* of the following: 10 x 2 = 20 marks**
2. What is holding temperature?
3. Which strain is used in production of glutamic acid? What is the industrial use of glutamic acid?
4. What are the problems associated with the baffles in the bioreactor?
5. State any one focus of research and target area for strain improvement in yeast.
6. What are explants?
7. Give two examples of enzymes derived from plants at the industrial level.
8. Name a strain used in obtaining SCOs.
9. On the economic level, what is the use of enzyme immobilization?
10. State any two positive influences of normal human microbiota.
11. What is differential staining?
12. Name two heat inactivated vaccines.
13. State the role of microbial adherence factors in disease pathology.

**II. Answer *ANY FIVE* of the following: 5 x 6 = 30 marks**

1. How does mutation and rec DNA methods improve strains?
2. Discuss the stages in industrial production of yogurt.
3. Discuss packed-bed reactors.
4. Explain the mechanism of graft vs host disease.
5. Discuss the different portals of exit and entry of pathogens in the body.
6. How would you interpret data obtained from competitive ELISA?
7. Construct a business model canvas with value propositions, channels and customer segments for a venture that involves production of probiotic drink.

**III. Answer the following: 2 x 10 = 20**

1. a. Draw a neat labeled diagram of a stirred tank bioreactor. What are its advantages? (8+2)

**OR**

b. Explain the stages in DSP. Discuss the purification processes used in the industry. (3+7)

1. a. Explain the different assays used to detect apoptosis.

**OR**

b. Explain the importance of tumor suppressor genes and proto-oncogenes in control of malignancy.