

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI • EXAMINATION – SUMMER • 2014****Subject Code: 160402****Date: 21-05-2014****Subject Name: Fundamentals of Industrial Biotechnology****Time: 10.30 am - 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 (a)** Enlist various raw material used for fermentation process. Explain any one in detail. **07**
- (b)** Define the term preservation. Explain the methodology used for preservation of industrially important microorganisms. **07**
- Q.2 (a)** Define and differentiate between primary and secondary metabolites with suitable explanation and example **07**
- (b)** Write a detail account on solid state fermentation. **07**
- OR**
- (b)** Define the term monoclonal antibody. Discuss about production of it. **07**
- Q.3 (a)** What do you understand by single cell protein? Explain about it in detail. **07**
- (b)** How primary metabolite aspartic acid is produced by fermentation mode, explain in detail? **07**
- OR**
- Q.3 (a)** Discuss in brief about role of bioprocess engineer in biotechnology industry. **07**
- (b)** Media formulation is essential step for product formation. Justify with suitable explanation. **07**
- Q.4 (a)** Explain about various types of medium for fermentation process. **10**
- (b)** Give brief outline about basic fermentation process. **04**
- OR**
- Q.4 (a)** What do you mean by cell cultures? Discuss about animal cell culture. **07**
- (b)** Give short note on biofertilizer. **07**
- Q.5 (a)** Describe in detail about fermentative production of acetic acid. **07**
- (b)** Write in detail about the process of cephalosporin by fermentation. **07**
- OR**
- Q.5 (a)** Define the term single cell protein. Discuss about it in detail. **07**
- (b)** Explain in detail about vaccine production by fermentation process. **07**
