

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-IV (New) EXAMINATION – WINTER 2015

Subject Code:2140405**Date:19/12/2015****Subject Name: Cell Biology and Industrial Biotechnology****Time: 2:30pm to 5:00pm****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) What is prokaryotic cell? Draw structure with proper labels. **07**
(b) Explain structure and function of LPS layer in bacteria. **07**
- Q.2** (a) Explain structure and function of flagella in a bacterial cell. **07**
(b) Explain different models proposed to justify structure of ribosome. **07**
- OR**
- (b) What is function of cell membrane? Explain different methods of transport across it. **07**
- Q.3** (a) What is function of Golgi apparatus in a eukaryotic cell? **07**
(b) Explain the process of mitosis with a neat diagram. **07**
- OR**
- Q.3** (a) Explain mechanism of cyclic nucleotide and kinase associated signalling process. **07**
(b) Explain submerged and stationary fermentation process with its merits and demerits. **07**
- Q.4** (a) Write a short note on MAP kinase cascades. **07**
(b) Explain different phases of cell cycle with importance of each. **07**
- OR**
- Q.4** (a) What are different methodologies for improvement of industrially useful strains? **07**
(b) Write a short note on need and formulation of media for industrial processes. **07**
- Q.5** (a) Write a detailed account on fermentative production of ethanol. **07**
(b) Differentiate between different components of cytoskeleton. **07**
- OR**
- Q.5** (a) Write a detailed account on fermentative production of citric acid. **07**
(b) What is function of mitochondria and chloroplast in a cell? **07**
