

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV (NEW) EXAMINATION – WINTER 2018****Subject Code: 2140405****Date: 22/11/2018****Subject Name: Cell Biology and Industrial Biotechnology****Time: 02:30 PM TO 05:30 PM****Total Marks: 70****Instructions:**

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

		MARKS
Q.1	(a) Why are mitochondria termed as power house of cell?	03
	(b) Describe chemical composition of plasma membrane.	04
	(c) Draw a labelled diagram of plant cell. Also describe functions of typical plant cell structures only.	07
Q.2	(a) Define the terms: peroxisomes and glyoxysomes.	03
	(b) Describe various functions of Golgi apparatus.	04
	(c) What is cell theory? Describe the cell theory along with its exceptions.	07
	OR	
	(c) What is cytoplasmic matrix? Describe various theories regarding physical nature of matrix.	07
Q.3	(a) Write a note on lysosomes in plants.	03
	(b) Draw labelled diagram of fluid mosaic model of plasma membrane.	04
	(c) What is endoplasmic reticulum? Explain its types, structure and function.	07
	OR	
Q.3	(a) Define the terms plasmid, nucleoid and mesosome.	03
	(b) Describe the structure and function of nucleolus.	04
	(c) Describe the ultrastructure of chloroplast.	07
Q.4	(a) What is meant by 70S and 80 S ribosomes? How many types of RNA and proteins are found in them?	03
	(b) Compare cell wall of eubacteria and archae bacteria.	04
	(c) Explain ultra structure of bacterial flagella.	07
	OR	
Q.4	(a) What is secondary messenger? Give example of it.	03
	(b) Explain molecular mechanism of G protein linked signal transduction.	04
	(c) Describe the events of first meiotic prophase with diagram.	07
Q.5	(a) Explain different strategies of strain improvement.	03
	(b) Compare first meiotic anaphase and second meiotic anaphase events.	04
	(c) Explain fermentative production of cephalosporin antibiotic.	07
	OR	
Q.5	(a) Explain simple and complex media.	03
	(b) What are medium requirements for fermentative production?	04
	(c) Explain fermentative production of citric acid.	07
