Seat No.:	Enrolment No
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GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV (NEW) - EXAMINATION - SUMMER 2017

Subject Code: 2140405 Date: 30/05/2017

Subject Name: Cell Biology and Industrial Biotechnology

Time: 10:30 AM to 01:30 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		Short Questions	14	
C	1	Define the term prokaryotes with suitable examples.		
	2	What is middle lamella?		
	3	is called powerhouse of cell.		
	4	Define the term plasmid.		
	5	Write down the full form and function of NPC.		
	6	Define the term fermentation.		
	7	What do you understand by the term mesosomes.		
	8	Enlist various secondary messengers.		
	9	List out the phases of cell cycle.		
	10	Give function and full form of MPF.		
	11	Define the term media optimization.		
	12	Protein is present in the structure of flagella.		
	13	Define the term eukaryotes with example.		
	14	Enzyme catalyze the production of cAMP.		
Q.2	(a)	Write the functions of following organelles: vacuole and cell wall.	03	
	(b)	Differentiate between prokaryotes and eukaryotes.	04	
	(c)	Draw a labeled diagram of animal cell with the role of each organelle.	07	
		OR		
	(c)	Describe the phases of mitosis in detail.	07	
Q.3	(a)	Draw the structure of G protein.	03	
	(b)	Define following terns (any two)	04	
		active transport, passive transport, osmosis		
	(c)	Name two cell-organelles that are double membrane bound.	07	
		State their functions and draw labeled diagrams of any one.		
0.0		OR	0.2	
Q.3	(a)	Differentiate between capsule and slimlayer.	03	
	(b)	Give sequence of processes take place in cell signaling.	04	
	(c)	Enlist cell surface receptor. Explain any one in detail with suitable diagrammatic representation.	07	
Q.4	(a)	Give various definitions of fermentation with suitable example.	03	
	(b)	Write about the process of endosperm formation.	04	
	(c)	Describe various steps of mechanism of G protein coupled	07	
	` /	receptor		
		OR		
Q.4	(a)	What are the functions of endoplasmic reticulum and golgi	03	

		apparatus?	
	(b)	Draw the ultrastructure of flagella with suitable labels.	04
	(c)	Explain the structure and function of nucleus of eukaryotic cell.	07
Q.5	(a)	With example differentiate between primary and secondary metabolites.	03
	(b)	Write a note on range of fermentation process.	04
	(c)	Draw a schematic diagram of ideal fermenter with its significances of each parameter.	07
		OR	
Q.5	(a)	What do you mean by SCP?	03
	(b)	Define the term fermentation medium. Discuss various types of medium with suitable examples.	04
	(c)	Explain the production on ethyl alcohol with flow chart and its applications.	07
