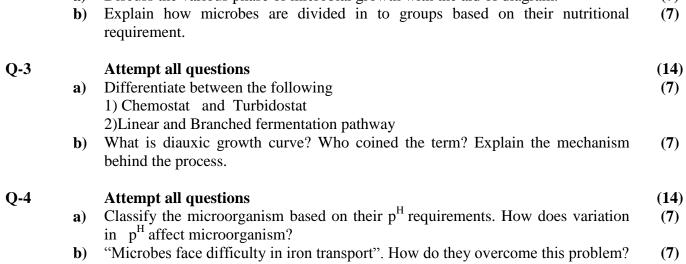
	Enrollm	ent No: Exam Seat No:	
	2111 01111	C.U.SHAH UNIVERSITY	_
		Summer Examination-2019	
	-	Name: Microbial Physiology and Metabolism Code: 4SC03MPM1 Branch: B.Sc. (Microbiology) :: 3 Date: 25/03/2019 Time: 02:30 To 05:30 Marks: 70	
	(2) I (3) I	Ons: Use of Programmable calculator & any other electronic instrument is prohibited. Instructions written on main answer book are strictly to be obeyed. Oraw neat diagrams and figures (if necessary) at right places. Assume suitable data if needed.	
Q-1		Attempt the following questions:	(14)
	a)	Define symport.	
	b)	Define diffusion.	
	c)	Define catabolism.	
	d)	Name of the end products of the light reaction of photosynthesis.	
	e)	Define fermentation.	
	f)	The mechanism of passive diffusion requires metabolic energy. True/False	
	g)	Anoxygenic photosynthesis bacteria oxidize ammonia. True/False	
	h)	ED pathway is found only in anaerobic prokaryotes. True/False	
	i)	TCA cycle functions in amphibolic reaction True/False	
	j)	All the bacteria including E.coli take part in nitrogen fixation. True/False	
	k)	Nitrogen fixation is a process that requires	
	1)	Incorporation of atmospheric N_2 to NH_4^+ occurs via the process of	
		In aerobic respiration, the terminal electron acceptor is	
Atte	n) mpt any f	In a passive diffusion, solute molecule cross the membrane Four questions from Q-2 to Q-8	
Q-2		Attempt all questions	(14)
	a)	Discuss the various phase of microbial growth with the aid of diagram.	(7)
	b)	Explain how microbes are divided in to groups based on their nutritional requirement.	(7)
Q-3		Attempt all questions	(14)
	a)	Differentiate between the following	(7)
		1) Chemostat and Turbidostat	





Q-5		Attempt all questions	(14)
	a)	What is specific growth rate and generation time? Derive a relationship between them.	(7)
	b)	What are the various way of transport of nutrient through the membrane in microbes? Explain their mechanism.	(7)
Q-6		Attempt all questions	(14)
	a)	What is phosphorylation? Which are the main ATP generating pathways in microbes? Explain their mechanisms.	(7)
	b)	Write an essay on biological nitrogen fixation.	(7)
Q-7		Attempt all questions	(14)
	a)	Discuss in detail lactate fermentation with the help of glycolysis pathways.	(7)
	b)	Describe the light reactions in an oxygenic photosynthesis.	(7)
Q-8		Attempt all questions	(14)
	a)	What is methylotrophy? Discuss the metabolism of methylotrophs.	(7)
	b)	Discuss the pentose phosphate pathway.	(7)

