Enrollment No:						
		C.U	.SHAH U	UNIVERSITY		
				amination-2016		
Subject	Name: Biopre	ocess [Technology			
Subject Code: 4LS04MBO2/4SC04BPT1			2/4SC04BPT1	Branch: B.Sc. (Microbiology)		
Semeste	r: 4	Date:	16/05/2016	Time: 02:30 To 05:30	Marks: 70	
(3)	Draw neat dia	grams	and figures (if nee	ook are strictly to be obeyed. cessary) at right places.		
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Q-2		Describe batch, fed-batch, continuous and SSF modes of operation for fermentation in detail.	(14)
Q-3		Discuss various methods for downstream processing for product recovery.	(14)
Q-4		Attempt all questions	
	a)	Discuss typical fermentation process for penicillin production.	(7)
	b)	Describe various methods for cell disruption for intracellular products.	(7)



Q-5		Attempt all questions	(14)	
	a)	Define hydrodynamic type of fermenter and explain deep jet fermenter in detail.	(7)	
	b)	Explain strategies of microbial strain improvement and discuss role of any two	(7)	
		mutagenic agent.		
Q-6		Attempt all questions		
	a)	Discuss the role of temperature, dissolved oxygen, foam and pH on monitoring and control of fermentation process.	(7)	
	b)	Write a note on sterilization and maintenance of aseptic conditions for	(7)	
	ŕ	fermentation media.		
Q-7		Attempt all questions	(14)	
	a)	Write a note on photo bioreactor.	(5)	
	b)	Write the roles of buffers and antifoaming agent in the design of fermentation	(5)	
		media.		
	c)	Describe scale up processes in fermentation industries.	(4)	
Q-8		Attempt all questions	(14)	
-	a)	Discuss the chemostat in fermentation process.	(5)	
	b)	Write a note on SCP – single cell protein.	(5)	
	c)	Draw a labeled diagram of a typical fermenter.	(4)	

