C. U. SHAH UNIVERSITY Summer Examination-2019

Subject Name: Industrial Microbiology

Subject Code: 5SC0	2IMB1	Branch: M.Sc. (Microbiology)	
Semester: 2	Date : 30/04/2019	Time : 02:30 To 05:30	Marks: 70

Instructions:

- (1) Use of Programmable calculator and any other electronic instrument is prohibited.
- (2) Instructions written on main answer book are strictly to be obeyed.
- (3) Draw neat diagrams and figures (if necessary) at right places.
- (4) Assume suitable data if needed.

SECTION – I

Q-1 Briefly explain the following-

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- **a.** Amoxycillin is a new semi-synthetic penicillin. True/False
- **b.** Chemical fertilizers are more cost-effective as compared to biofertilizers. True/False
- **c.** A metabolic process that produces chemical changes in organic substrates through the action of enzymes is known as...... (fermentation/bioconversion/nitrification)
- **d.** In microbes Glycolysis is a catabolic pathway. True/False
- e. Write the scientific name of Baker's yeast.
- **f.** The binding of an inhibitor can promote a substrate from entering the enzyme's active site. True/False
- g. What is bacterial generation time?

Attempt All Questions.

Q-2

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- Write short notes on-
- **a** Types of culture media
- **b** Long term preservation of microbes

OR

Q-2	a	What do you mean by Genetic Improvement of microbes? Briefly explain the methods adapted for it.	7
	b	What are designer microbes? Explain their importance in modern world.	7
Q-3		Attempt all questions	
-	a	What are secondary metabolites? Explain the importance of secondary metabolites of microbes in medical field.	7
	b	Explain the diauxic bacterial growth kinetics with suitable diagram.	7
		OR	

Q-3 What is fermentation? Explain the different parts of a horizontal industrial fermenter. 14



SECTION – II

Q-4			Briefly explain the following-	7
		a.	fermentation is also described as a 'closed system. (Batch /continuous/fed batch)	
		b.	A metabolic pathway is an independent series of chemical reactions occurring within a	
		_	cell. True/False	
		c.	Freezing is a good way to store bacteria. True/False	
		d.		
		e. f.	Cryogenics is a method of strain improvement. True/False	
			Immobilized enzymes can provide increased resistance to changes in conditions such as	
		g.	pH or temperature. True/False	
Q-5			Write short notes on-	
	a		Properties of industrial strain	7
	b		Insulin production by rDNA technology	7
			OR	
Q-5	a		What is bio fertilizer? Explain advantages of bio fertilizer over synthetic fertilizers.	7
	b		What is solid state fermentation? Explain where solid state fermentation process is used at industrial scale.	7
Q-6			Write short notes on-	
· ·	a		Enzyme immobilization	7
	b		Cell growth kinetics	7
			OR	
Q-6			Attempt all Questions	
	a		What do you mean by downstream processing? Explain the methods used for downstream processing at industrial scale.	7
	b		Write difference between batch and continuous culture.	7

