

Roll No:

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M.Sc. Biochemistry, Semester-III Examination-2023

Paper Title: Biotechnology

Paper Code: MBC 310

Time: 1.5 hours

Max Marks: 37

Note: This paper has 3 sections A, B, and C, Attempt all the three sections

Section A: Answer all the questions; Section B: Answer any 1 out of 2; Section C: Answer all the questions, each question has an internal choice

Abbreviations Used

CLO- Course Learning Outcome, PLO- Program Learning Outcome, BTL- Bloom Taxonomy Level: BT level 1-Remember; BT level 2-Understand; BT level 3-Apply; BT level 4-Analyse; BT level 5-Evaluate, BT level 6-Create

Section A (Attempt all questions)

(1X7=07 Marks)

Q. No.	Questions	BTL	CLO	PLO
a	Delivery of nucleic acids to protoplasts or intact cells cannot be done via microinjection. (True or False)	3	1	3
b	The main carbon source for production of single cell protein is	1	3	3
c	Two types of synthetic seeds are..... and.....	1	1	2
d	Microarrays are extremely powerful ways to analyze protein expression. (True or False)	2	5	3
e	Baffles have minimized the microbial growth on the sides of the fermenter. (True or False)	2	2	2
f	Gene activation can also be achieved by the insertion of a transposable element, or transposon, into the gene. (True or False)	4	5	3
g	Pyrosequencing does not require electrophoresis or any other fragment separation procedure and so is more rapid. (True or False)	5	4	3

SECTION B: Long type Questions (Attempt ANY ONE out of two)**[15 Marks]**

Q. No	Questions (Any One)	BTL	CLO	PLO
1	What are somaclonal variations? Discuss the main cause of these variations. Also mention few advantages and disadvantages of somaclonal variation.	1	1	2
2	Discuss different experimental approaches that you can use to determine the functions of individual genes.	3	5	3

SECTION C: Short-type Questions. (Attempt all questions, each question has an internal choice)**[5x3=15 Marks]**

Q. No	Questions	BTL	CLO	PLO
1	Discuss classification of Bioreactors. OR Write a short note on single cell protein.	2	2	3
2	Write salient features of chain termination method of DNA sequencing. Can this method be used for sequencing genome? OR How was the sequencing of <i>H. influenzae</i> genome performed using shotgun method?	4	4	3
3	Discuss three types of DNA sequence features that can be used as DNA markers. OR Discuss two methods that can be used to directly examine DNA molecules for restriction sites.	1	4	2
