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GIET UNIVERSITY, GUNUPUR - 765022
M. Sc. (Second Semester) Examinations, July - 2023
22BTPC212 - Microbial Technology
(Biotechnology)

Time: 3 hrs

Maximum: 70 Marks

(The figures in the right hand margin indicate marks.)

PART – A**(2 x 10 = 20 Marks)**

Q.1. Answer <i>ALL</i> questions	CO #	Blooms Level
a. Name two microbes used in food processing.	CO4	2
b. What is the role of yeast in food industry?	CO4	1
c. Name two processes used in downstream processing.	CO3	2
d. Name two microbes used in efficient cloning mechanism.	CO3	2
e. Name two bioactive compounds used in medical field.	CO1	2
f. Write two characteristics of biosensor.	CO2	2
g. What do you mean by auxotrophic mutant?	CO1	1
h. Differentiate between drugs and vaccines.	CO5	2
i. What is the difference between aerobic biodegradation and anaerobic biodegradation?	CO2	1
j. Write two characteristics of industrially important microbes.	CO1	2

PART – B**(10 x 5 = 50 Marks)**Answer *ANY FIVE* questions

	Marks	CO #	Blooms Level
2. a. Write about the mechanism of biodegradation process with its types.	5	CO2	2
b. Discuss about the attributes required by industrial microbes to be used as efficient cloning and expression system for biological production.	5	CO3	2
3.a. Write brief notes on international and national guidelines used regarding the use of genetically modified organisms in environment, food and pharmaceuticals.	5	CO2	2
b. Discuss about the role of microbes in the production of recombinant proteins and pharmaceuticals.	5	CO3	3
4. a. Discuss about the concept of bioleaching and its types.	5	CO1	3
b. Write notes on microbial cell factories.	5	CO3	2
5.a. Discuss about the non-recombinant ways of introducing desirable properties in GRAS microbes to be used in food.	5	CO4	3
b. Write notes on metagenomic library construction.	5	CO5	2
6. a. Discuss about the role of microorganisms in human welfare.	5	CO1	3

b.	Write notes on metagenomics and meta transcriptomics with their potential in environmental clean-up process.	5	CO5	2
7.a.	Explain about the role of biosensor in environmental monitoring with its importance.	5	CO2	3
b.	Write notes on CRISPR/Cas9 system as nucleases for genome editing.	5	CO1	2
8. a.	Write notes on global biogeochemical cycles.	5	CO2	2
b.	Explain the role of bacterial and viral vector in drug delivery system.	5	CO4	2

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