

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV /DEC 2024

Seventh Semester

Chemical Engineering

OBT355 – Biotechnology for Waste Management

(Common to Civil Engineering)

Regulations - 2021

Duration : 3 Hrs

Maximum : 100 Marks

PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	Define Bioremediation.	RE	1	2
2.	Distinguish between aerobic and anaerobic process?	UN	1	2
3.	Give the types of waste biomass?	UN	2	2
4.	What are the methods of solid waste management?	UN	2	2
5.	How do you produce bioethanol from food and agricultural waste?	UN	3	2
6.	State the byproducts of bio conversation waste.	RE	3	2
7.	What are the applications of biopolymers?	RE	4	2
8.	Define proteases.	RE	4	2
9.	What are the factors that affecting composting process?	RE	5	2
10.	What are the roles of microorganisms in composting?	RE	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*13 = 65)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a Explain briefly about pretreatment methods in anaerobic process.	UN	1	13
	Or			
	b Explain the Factors affecting process efficiency biological treatment process and explain in detail.	UN	1	13
12.	a How waste biomass is converted into value addition? Explain briefly.	RE	2	13
	Or			
	b List the various stages of solid waste management under Indian context.	RE	2	13
13.	a Enumerate the production methods and benefits of biohydrogen.	AN	3	13
	Or			
	b How biobutanol produced from green coffee? Write their benefits.	AN	3	13
14.	a Explain briefly about lipases and write down the applications of lipases.	UN	4	13
	Or			
	b What is meant by Biopolymer synthesis? Write down the types and applications of Biopolymer synthesis.	UN	4	13

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|-----|---|---|----|---|----|
| 15. | a | What is the role of microorganisms in composting? Explain the types and benefits. | RE | 5 | 13 |
| | | Or | | | |
| | b | What are the factors that affecting the composting process? Give some tips for successful composting. | RE | 5 | 13 |

*PART – C (Marks 1*15 = 15)*

<i>Q.No</i>		<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
16.	a	What is meant by bio-based economy? What are the benefits of bio-based economy?	UN	2	15
		Or			
	b	Explain about single stage and two stage anaerobic digestions with neat sketches.	UN	3	15