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B TECH
(SEM-V) THEORY EXAMINATION 2020-21
POLYMER DEGRADATION & STABILIZATION

Time: 3 Hours

Total Marks: 100

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt all questions in brief.

2 x 10 = 20

Q no.	Question	Marks	CO
a.	Define thermal degradation.	2	1
b.	Define cavitation.	2	1
c.	What are bio polymers?	2	4
d.	Define x-ray resistance.	2	1
e.	Define DTA.	2	1
f.	What is ionization?	2	1
g.	What do you understand by stabilization?	2	2
h.	What is Stability of polymer against solvolytic agents?	2	1
i.	Define heat resistance polymers.	2	1
j.	What do you mean by stability of polymers?	2	1

SECTION B

2. Attempt any three of the following:

Q no.	Question	Marks	CO
a.	Explain different modes of polymer degradation.	10	1
b.	Distinguish between mechanical and chemical degradation.	10	5
c.	Discuss ultrasonic degradation.	10	1
d.	Explain methods of stabilization of polymers.	10	1
e.	Describe microbial degradation of synthetic polymers.	10	1

SECTION C

3. Attempt any one part of the following:

Q no.	Question	Marks	CO
a.	Give some application of mechanical degradation.	10	2
b.	Describe photo degradation.	10	2

4. Attempt any one part of the following:

Q no.	Question	Marks	CO
a.	Give methods of evaluating of heat resistance.	10	1
b.	What are biodegradable plastics? Describe polyester and polyamides.	10	4

5. Attempt any one part of the following:

Q no.	Question	Marks	CO
a.	Describe acidic degradation of polyaldehydes and polyacetals.	10	1
b.	Explain radiation stability.	10	1

6. Attempt any one part of the following:

Q no.	Question	Marks	CO
a.	Describe induced chemical alterations of polymers and mastication of natural and synthetic rubber	10	5
b.	Explain general applications of biodegradable plastics.	10	4

7. Attempt any one part of the following:

Q no.	Question	Marks	CO
a.	Explain alkaline degradation of poly saccharides.	10	3
b.	Write a short note on: (i) heat effect in biopolymers, (ii) radiation stability and protection radiation effects in the bio polymer.	10	4