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# FIFTH SEMESTER DIPLOMA EXAMINATION IN POLYMER TECHNOLOGY — MARCH, 2015

## PLASTIC TECHNOLOGY

[Time: 3 hours

(Maximum marks: 100)

#### PART-A

(Maximum marks: 10)

Marks

- I Answer the following questions in one or two sentences. Each question carries 2 marks.
  - 1. Define Tg. What is the ratio Tg/Tm for Polymers?
  - 2. State the function of fillers in Plastic moulding.
  - 3. What is Ziegler Natta catalyst?
  - 4. Define Polyester.
  - 5. How PF resin is formed?

 $(5\times2=10)$ 

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## PART-B

(Maximum marks: 30)

- II Answer any five of the following questions. Each question carries 6 marks.
  - 1. Explain a method to determine Tg.
  - 2. Classify plastics according to their temperature response and origin.
  - 3. Define commodity plastics. What are the different types of commodity plastics?
  - 4. Expand LLDPE, HDPE, XLDPE, PMMA, HIPS and ABS.
  - 5. What are the different types of Nylon?
  - 6. Write a short note on liquid crystal polyester.
  - 7. Mention any two applications of PF, UF and MF.

 $(5 \times 6 = 30)$ 

## PART-C

(Maximum marks: 60)

(Answer one full question from each unit. Each full question carries 15 marks.)

UNIT-I

III Explain the history, importance of plastics in modern life and advantages over other conventional materials.

15

			Marks
IV	Exp	plain plastic compounding and additives.	15
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V	(a)	Explain the polymerization of polyethylene by pressure polymerization.	7
	(b)	Explain the industrial production of PVC and its applications.	8
		OR	
VI	(a)	Explain the industrial production of PMMA.	7.
	(b)	Explain the manufacture of HIPS and its two applications.	8
		Unit—III	
VII	(a)	Distinguish Nylon 6 and Nylon 6, 6 based on structure and mention the monomers.	ne 8
	(b)	Explain the industrial production and application of PET.	7
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VIII	(a)	Explain the manufacture of Nylon 6, 6.	7
	(b)	Distinguish between thermoplastics and thermosets.	8
		Unit—IV	
IX	(a)	Explain the manufacture of UF resin.	7
	(b)	Explain the polymerisation of PF resin.	8
		OR AT	
X	(a)	Explain the polymerization of Epoxy resin.	8
	(b)	Explain the manufacture of MF.	7

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