



17655

21718

3 Hours / 100 Marks

Seat No.

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- Instructions :** (1) *All questions are compulsory.*
(2) *Answer each next main question on a new page.*
(3) *Illustrate your answers with neat sketches wherever necessary.*
(4) *Figures to the right indicate full marks.*

Marks

- 1. Attempt any five :** **20**
- a) Define waste management. Why plastic waste management is necessary ?
 - b) Enlist and explain various ways of disposal of plastics.
 - c) Define the following terms :
 - i) Incineration
 - ii) pyrolysis
 - d) Draw a neat sketch of experimental set up for PET-PVC separation.
 - e) State advantages and limitations of recycled material. (2 each)
 - f) State the role of enzymes in biodegradation and enlist four examples of enzymes used.
 - g) Differentiate household waste with industrial waste.
- 2. Attempt any two :** **16**
- a) State the recycling codes for plastics with the applications of each.
 - b) Explain sorting technique for plastics on the basis of
 - i) Wettability
 - ii) Density
 - c) Explain the following processes for Nylon recycling
 - i) Solvolysis
 - ii) Gasification.
- 3. Attempt any two :** **16**
- a) State and explain four hazards to environment due to disposal of plastic waste.
 - b) State the role of 4 additives used for improving the properties of plastic waste.
 - c) Explain the mechanism of biodegradation in detail with an example.

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4. Attempt any two :

16

- a) Differentiate in between various types of recycling.
- b) Enlist four biodegradable material and state applications of each.
- c) Explain the process of recycling of PET bottles.

5. Attempt any two :

16

- a) Explain pyrolysis process with example.
- b) Enlist various equipments used for sorting. Explain working of any one.
- c) Explain various tests to measure resistance of plastics to biodegradation.

6. Attempt any four :

16

- a) List down various types of pollution. State how to control pollution.
 - b) Explain sources of plastic waste.
 - c) State the selection criteria for land filling site.
 - d) Compare conventional plastic with biodegradable plastic.
 - e) Explain two methods of collection of plastic waste.
 - f) Explain chemical recycling of commodity plastic waste of PVC.
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