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22223

3 Hours / 70 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
(2) Illustrate your answers with neat sketches wherever necessary.
(3) Figures to the right indicate full marks.
(4) Assume suitable data, if necessary.
(5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

- 1. Attempt any FIVE of the following: 10**
- a) Define Waste Management.
 - b) Give classification of recycling techniques.
 - c) State role of enzymes in biodegradation
 - d) Enlist the criteria for sorting of plastic waste.
 - e) State Methanolysis reaction for PET.
 - f) Give any two applications of recycled LDPE.
 - g) Enlist any two energy resources.
- 2. Attempt any THREE of the following: 12**
- a) Explain the need of plastic waste management.
 - b) State any four properties and applications of PHA.
 - c) Differentiate between sorting and separation.
 - d) Describe incineration process for mixed plastic.

P.T.O.

- 3. Attempt any THREE of the following:** **12**
- a) Explain in brief 4R terminology to control the pollution due to plastic waste.
 - b) Describe collection system of plastic waste.
 - c) Explain in brief gasification of plastic waste.
 - d) State any four applications of recycled polypropylene.
- 4. Attempt any THREE of the following:** **12**
- a) With neat diagram explain float and sink separation method.
 - b) Describe the process of granulation of plastic waste.
 - c) Elaborate applications of recycled HDPE.
 - d) State the various selection criteria for plastic waste for manufacturing recycled plastic product with respect to percentage and times of recycling.
 - e) Explain characteristic features and function of eco system.
- 5. Attempt any TWO of the following:** **12**
- a) Define waste, explain various sources of plastic waste.
 - b) Explain role of different additives used for improving properties of recycled plastic.
 - c) Name any four products made from recycled plastics, state their advantages and limitations.
- 6. Attempt any TWO of the following:** **12**
- a) State selection criteria for land fill site and describe process of land filling.
 - b) With neat diagram describe extrusion process for melf reprocessing.
 - c) Explain the cause, effects and control measures of air pollution.
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