



17655

11819

3 Hours / 100 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**.*

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|---|----------------|
| 1. A) Attempt any three. | 12 |
| a) Define pollution and state types of pollutants. | (1+3) |
| b) Explain hydrolysis of PET. | |
| c) State classification of plastics waste. | |
| d) Explain 4R Terminology to control the pollution due to plastic waste. | |
| B) Attempt any one. | 6 |
| a) With neat dig. Elaborate the following sorting tech. based on | |
| 1) density 2) wettability | (3+3) |
| b) State any four advantages, limitations and applications of recycled plastics. | (2+2+2) |
|
2. Attempt any four. |
16 |
| a) Write down various steps involved in plastics waste management, explain in detail. | |
| b) With neat diagram, explain gasification of plastic waste. | |
| c) Define Recycling, explain its types. | (1+3) |
| d) State the different criteria's for selection of landfill site. | |
| e) State any four hazard which occurs due to accumulation of waste. | |
| f) State and explain different sources of plastic waste. | |
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3. Attempt any four. |
16 |
| a) Explain with diagram area method of landfilling. | |
| b) Describe collection system of plastic waste. | |
| c) Plastic waste is a source of energy. Justify. | |
| d) Describe construction and working of hydrocyclone separator. | |
| e) Explain method of melt processing for waste plastics. | |

P.T.O.



4. A) Attempt **any three**. 12
- a) Differentiate between sorting and separation.
 - b) State any four advantages and limitations of incineration process. (2+2)
 - c) With neat dig. Explain working of Electrostatic separator.
 - d) Explain in brief process of pyrolysis.
 - e) State function and examples of following additives (2+2)
 - 1) Processing Aid
 - 2) Stabilizers.
- B) Attempt **any one**. 6
- a) Describe Recycling of Elastomeric waste.
 - b) Write down any four advantages, limitations and application of biodegradable plastic material.
5. Attempt **any four**. 16
- a) Explain mechanism of Biodegradation.
 - b) Explain Recycling of any one polyolefinic waste.
 - c) Compare Biodegradable plastics with conventional plastics.
 - d) State advantages and limitations of chemical recycling process. (2+2)
 - e) Rubber waste is difficult to Recycle. Justify.
 - f) Explain different factors that affecting the biodegradation.
6. Attempt **any four**. 16
- a) How will you measure resistance of plastics to bacteria ?
 - b) Describe recycling of any one polyolefin.
 - c) Explain the test to measure the resistance of plastics to fungi.
 - d) Describe Recycling of PVC waste.
 - e) Elaborate the terms :
 - 1) Biopolymer.
 - 2) Degree of Biodegradation. (2+2)
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