

17655

21819

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.
 - (5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following :

20

- (a) Define waste. Explain waste management process.
- (b) Differentiate any four points between physical and chemical recycling.
- (c) Enlist four properties of waste plastics to be considered for sorting purpose.
- (d) Explain the mechanism of biodegradation of plastic waste.
- (e) List any four limitations of recycled plastics.
- (f) State any four hazards which occurs due to accumulation of waste.
- (g) Define degree of biodegradability. List any four additives used for biodegradation of plastics.

2. Attempt any TWO of the following :

16

- (a) Define incineration. Explain incineration of waste plastics with neat figure.
- (b) State principle of cyclone separator. Explain its working with neat figure.
- (c) Explain recycling of PVC with neat figure.

- 3. Attempt any FOUR of the following : 16**
- (a) Explain sources of plastic waste with suitable examples.
 - (b) Describe four types of recycling methods.
 - (c) Explain sorting of waste plastics based on magnetic properties.
 - (d) Write any four applications of biodegradable plastics.
 - (e) Describe the test to measure resistance of plastic biodegradation to fungi.
 - (f) Define pollution. State three types of pollutants with examples.
- 4. Attempt any TWO of the following : 16**
- (a) Explain with neat figure the recycling of PET bottle.
 - (b) Explain recycling of any polyolefine with neat figure.
 - (c) Explain gasification of plastic waste with neat figure.
- 5. Attempt any FOUR of the following : 16**
- (a) Justify the need of plastic waste management.
 - (b) Classify the screening process used for waste plastics.
 - (c) Describe the test to measure resistance of plastic biodegradation to bacteria.
 - (d) Write any four applications of recycled plastics.
 - (e) Explain collection method of plastic waste.
 - (f) List any four enzymes used for plastic waste biodegradation with their functions.
- 6. Attempt any TWO of the following : 16**
- (a) Explain recycling of elastomeric waste with neat figure.
 - (b) State four advantages and limitations of biodegradable plastics.
 - (c) Explain pyrolysis of waste plastics with neat figure.
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