

17654

11920

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) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.
 - (7) Abbreviations used convey usual meaning.

Marks

- 1. Attempt any FIVE of the following:** **20**
- a) Explain any four advantages of plastics packaging.
 - b) Describe the skin packaging process of plastics packaging.
 - c) Write the properties of the following plastics related to plastics packaging.
 - (i) LLDPE
 - (ii) PS
 - d) State the regulations of food packaging.
 - e) Explain the characteristics of flexible packaging.
 - f) Define hot melt lamination? State its advantages.
 - g) Explain the process of PET recycling.

P.T.O.

- 2. Attempt any FOUR of the following:** **16**
- a) State the properties and applications of PP and PET in packaging application.
 - b) 'Polyesters are widely used in packaging.' Justify
 - c) Explain pouch styles like pillow pouches, and three side seal pouches with neat diagram.
 - d) Explain HDPE recycling.
 - e) Write any four properties and four application area of EVA in plastics packaging.
 - f) Explain vacuum and gas packaging.
- 3. Attempt any FOUR of the following:** **16**
- a) Explain retort pouches and forming pouches with neat diagram.
 - b) Explain use of bulk and heavy duty bags for packaging. State its process.
 - c) Explain pallet wrapping process.
 - d) Explain the adhesive lamination process with neat diagram.
 - e) Explain thermoforming - fill - seal process with labelled diagram.
 - f) Explain multilayer food packaging.
- 4. Attempt any FOUR of the following:** **16**
- a) Explain the use of drums and containers in plastics packaging.
 - b) Explain the recycling rates of plastics packaging.
 - c) Explain snap fit clousers and threaded clousers for plastics packaging.
 - d) Explains stack load test for plastics packaging.
 - e) Explain foam blow moulding process.
 - f) Explain in mould labelling process.

- 5. Attempt any FOUR of the following:** **16**
- a) Explain the use and properties of PVDC polymer in plastics packaging.
 - b) State properties and applications of polycarbonate in plastics packaging.
 - c) Explain evaluation of seals in flexible packages.
 - d) Explain meaning and need of co-injection blow moulding.
 - e) Explain the thermal lamination process with diagram.
 - f) Explain resource depletion and energy efficiency in plastics packaging.
- 6. Answer any FOUR of the following:** **16**
- a) Explain the principle of extrusion coating.
 - b) Describe the vibration test for plastic packaging.
 - c) Explain, giving examples, advantages of using biodegradable plastics for packaging.
 - d) Explain the use of cushioning in plastic packaging.
 - e) Explain medical packaging regulation for plastics packaging.
 - f) Explain the threshold of regulations in plastics packaging.
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