

22228

21819

3 Hours / 70 Marks

Seat No.

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- Instructions* –
- (1) All Questions are *Compulsory*.
 - (2) Illustrate your answers with next sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Assume suitable data, if necessary
 - (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.

Marks

- 1. Attempt any FIVE of the following: **10****
- a) Write the specification of bearings.
 - b) What is casting process?
 - c) State any two application of springs.
 - d) State any two solar systems used in plastic production.
 - e) State the need of material handling in plastic production.
 - f) What are the different methods of energy conservation?
 - g) State the modes of heat transfer.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) What are the various types of gear drives? State their applications.
 - b) Explain with neat sketch the process of soldering for joining the plastic parts.
 - c) State any two important components of the PV systems with their sketches and state their functions.
 - d) Explain working principle of conveying equipment used in plastic industry.
- 3. Attempt any THREE of the following:** **12**
- a) Explain with neat sketch working principle of milling machine.
 - b) Draw a labeled sketch of solar heating systems.
 - c) What are the factors to be considered while selecting material handling equipments.
 - d) Explain the heat transfer by radiation for the extrusion plastic processing.
- 4. Attempt any THREE of the following:** **12**
- a) What are the safety norms to be followed for preventive and breakdown of power transmission system?
 - b) List the accessories and consumables required in brazing and soldering.
 - c) Explain the working principle of Biomass power system.
 - d) Name any one material handling equipment and state any two troubles and their remedies for that equipment with their causes and remedies for material handling equipment.
 - e) What is the need of energy conservation? Explain any one method in detail.

- 5. Attempt any TWO of the following:** **12**
- a) Compare rigid and flexible couplings with neat sketches.
 - b) Distinguish between soldering and brazing.
 - c) What are the applications of large wind turbines and small wind turbines and explain working principle of geared and direct drives used in any one turbine systems.
- 6. Attempt any TWO of the following:** **12**
- a) Explain various pipe fittings used in plastic engineering.
 - b) Explain standard safety precautions for the given material handling equipments.
 - c) What are the criterion to be considered while selecting heat exchanger for plastics processing unit and compare parallel flow and counter flow heat exchanger.
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