

22228

11920

3 Hours / 70 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.

Marks

- 1. Attempt any FIVE of the following: **10****
- a) List the different types of hand tools used in plastic processing machines.
 - b) Define brazing.
 - c) State any four products of plastics, that are in plastics manufactured by casting.
 - d) State the applications of solar heating system.
 - e) List the two safety precautions for material handling equipments.
 - f) List the heat transfer modes in plastic processing.
 - g) Why energy conservation is essential in plastic processing?

P.T.O.

- 2. Attempt any THREE of the following: 12**
- a) Explain the types of spanners used in the plastic processing machine and also explain their uses.
 - b) Describe with sketch any one joining process used for plastic processing.
 - c) Explain with sketch any one solar heating system.
 - d) State the criteria for selection of material handling equipment.
- 3. Attempt any THREE of the following: 12**
- a) Explain with sketch working principle of milling machine.
 - b) Explain with sketch any one wind turbine system.
 - c) Explain the working principle and application of one material handling equipment used in plastic processing.
 - d) Explain the heat transfer by conduction in plastic processing.
- 4. Attempt any THREE of the following: 12**
- a) Explain with sketch the types of couplings used in plastic processing machine.
 - b) Elaborate the safety precaution during soldering and brazing in plastic joining process.
 - c) Explain with sketch working principle of biomass power system.
 - d) Explain working principle of surface and overhead equipment used in plastic industry.
 - e) Explain with sketch working principle of parallel flow heat exchanger.

- 5. Attempt any TWO of the following: 12**
- a) Sketch different types of belt drives and gear drives and state their application.
 - b) Explain with sketch working principle of power hacksaw machine with application.
 - c) Name the plastic part used in solar PV system. Justify its use for the same.
- 6. Attempt any TWO of the following: 12**
- a) State the various causes and their remedies for general failure in power transmission.
 - b) List the troubleshooting and remedies for conveying equipments used for material handling.
 - c) Justify the criteria of selecting the heat exchanger for the given plastic processing unit.
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