22228

12425

03 Hours / 70 Marks Seat No. | | | | | | | | |

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) Assume suitable data, if necessary.

(6) Use of Non-programmable Electronic Pocket Calculator is permissible.

(7) 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) Enlist the various types of spanners used in plastic processing.

b) Enlist the any four types of pipe fitting used in plastic processing.

c) Enlist any two types of solar heating systems.

d) Name the various surface material handling equipment.

e) State the need of the material handling equipments in plastic processing.

f) State the examples of heat transfer by conduction in plastic processing.

g) State the meaning of heat transfer by radiation.

Marks

2. Attempt any THREE of the following: **12**

a) Explain the various types of pipes used in the plastic processing machines.

b) Explain any one casting process for plastic material with neat sketch.

c) Explain the construction and working of the large wind turbine with neat sketch.

d) Explain the heat transfer by convection for the extrusion in plastic processing.

3. Attempt any THREE of the following: **12**

a) Describe the rigid coupling used in power transmission with neat sketch. State its applications.

b) Explain the various precautions and safety measures taken during soldering and brazing of the plastic materials.

c) Explain any two important components of the solar PV system with their sketches. Also state functions of each.

d) Explain the various methods of energy conservation.

4. Attempt any THREE of the following: **12**

a) Describe the working setup of soldering with neat sketch.

b) Describe the working principle of biomass power system with neat sketch.

c) Identify any four faults in overhead material handling equipments and suggest the remedies for them.

d) Explain the safety precautions to be taken while using the material handling equipments.

e) Explain the parallel flow heat exchanger with neat sketch. State its advantages.

Marks

5. Attempt any TWO of the following: **12**

a) State any four causes of general failure in power transmission and suggest the remedies for that.

b) Describe the construction and working of lathe machine. State the various operations carried out on it in plastic processing.

c) Describe in brief the various factors to be considered while selecting the material handling equipments.

6. Attempt any TWO of the following: **12**

a) Sketch and explain the any one type of power tool used. State its specifications and the uses.

b) State various forming processes for plastic material. Explain any two with neat sketches.

c) Describe the construction and working principle of geared and direct drive small wind turbines with neat sketches and differentiate between them.