

INSTRUCTIONS TO CANDIDATES

(1) All questions carry marks as indicated.

(2) Solve **SIX** questions as follows :

Que. No. **1 OR** Que. No. **2**

Que. No. **3 OR** Que. No. **4**

Que. No. **5 OR** Que. No. **6**

Que. No. **7 OR** Que. No. **8**

Que. No. **9 OR** Que. No. **10**

Que. No. **11 OR** Que. No. **12**

(3) Due credit will be given to neatness and adequate dimensions.

(4) Illustrate the answers with necessary figures/drawings wherever necessary.

1. (a) What are 'Master patterns' ? How they differ from other patterns ? Explain. Also explain core print in brief. 7

(b) Explain the various types of allowances provided on a pattern. 7

OR

(b) Explain the purpose of adding following additives :

(1) Accelerators

(2) Elastomers

(3) Plasticizers

(4) Modifiers. 6

OR

12. (a) Explain with neat sketch process of transfer moulding. 5

(b) Explain with neat sketch process of Blow Moulding. Also mention its application. 5

(c) What is welding of plastics ? Explain the process. 4

2. (a) Classify Moulding Process. Also explain the desirable characteristics of moulding sand in brief. 7
 (b) Explain process of CO₂ Moulding. Also mention its advantages and disadvantages. 7
3. (a) What are requirements of an ideal gating system ? Also explain why sprue should be tapered ? 7
 (b) Describe slush casting. Also mention its salient features. 6

OR

4. (a) Explain with neat sketch working of High frequency induction furnace. 6
 (b) Explain with neat sketch the process of True centrifugal casting. State its industrial applications. 7
5. (a) Describe Oxy-acetylene gas cutting. Explain terms 'Kerf' and 'Drag'. 5
 (b) What is Resistance Welding ? Give its classification. 4
 (c) What is Solid state welding ? Explain in brief Explosive welding. 4

OR

6. (a) Explain the process of Submerged Arc Welding. Mention its advantages and disadvantages. 6
 (b) Explain the process of Thermit Welding. What are its advantages ? 7

7. (a) Explain with the help of neat sketches, various rolling stand arrangements. 7
 (b) Explain in reference to hot working, the following processes :
 (i) Wire Drawing
 (ii) Extrusion. 6

OR

8. (a) Classify methods of Forging. 3
 (b) How hot working differs from cold working ? 4
 (c) Explain with neat sketch working of a pneumatic hammer. 6
9. (a) Classify press according to the method of power transmission and construction. Also explain with neat sketch Gap press and Horn press with their application. 7
 (b) Draw a neat sketch of a power press and label its parts. Also mention function of its parts. 6

OR

10. (a) Make a neat sketch of a die set and describe its various details and accessories. 7
 (b) Describe various shearing operations performed on presses. Also explain clearance in reference to shearing operations. 6
11. (a) Define plastics. What is a monomer ? Explain polymerisation. Also explain how thermoplastic differs from thermosetting plastic ? 8