

Seat  
No.

--	--	--	--	--	--



मठ - 005

**Manufacturing Engg.- I**  
**(123105)**

P. Pages : 2

Time : Three Hours

Max. Marks : 80

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Answersheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Answer **any two** subquestions from each unit.
5. Draw neat sketches wherever necessary.
6. Figures to the right indicate full marks.

**UNIT - I**

1. a) What are dross and gas porosity ? How they can be prevented from becoming the part of finished casting ? 8  
b) What is pattern ? Name any four allowances provided on the pattern for sand casting and state the reasons why they are provided. 8  
c) i) State the Chvorinov's rule for total solidification time and explain in brief the factors affect the solidification time. 4  
ii) What is the most commonly used type of gate ? Explain the reasons for its choice. Draw the sketch. 4

**UNIT - II**

2. a) Explain with sketch various methods available for break down passes in rolling. 8  
b) i) Explain principle of manufacturing process which is used to manufacture electric wire. 4  
ii) Explain type of forging method which is generally use to manufacture bolts head. 4  
c) i) Explain Hydrostatic extrusion with neat sketch. 4  
ii) What is draft ? Why is draft provided in drop forging die ? 4

**UNIT - III**

3. a) Describe with neat sketch the type of flames obtained in oxy -acetylene gas welding process giving their application. 8
- b) i) Draw the sketches and list the different types of welding joints. 4
- ii) Name the gases used in inert gas arc welding and explain their functions in inert gas arc welding. 4
- c) i) Differentiate between Gas Tungsten Arc welding (GTAW) and Gas Metal Arc welding (GMAW). 4
- ii) List the various types of resistance welding process. Explain principle of resistance welding. 4

**UNIT - IV**

4. a) Define following terms with respect to lathe machine. 8
- i) Cutting speed ii) Feed
- iii) Depth of cut iv) Machining time.
- b) Explain any four types of Milling Cutters with neat sketch. 8
- c) i) Explain spot facing and counter sinking operation with neat sketch. 4
- ii) Compare honing and lapping operations. 4

**UNIT - V**

5. a) Briefly explain the powder metallurgy process with block diagram. 8
- b) Explain any one of the atomisation process used for preparing the metallic powder & List the method of atomisation process. 8
- c) Explain any five secondary operations which are performed on sintered part to achieve the final dimensions and properties of the part. 8

\*\*\*\*\*