

Enrollment No./Seat No.:

GUJARAT TECHNOLOGICAL UNIVERSITY
Bachelor of Engineering - SEMESTER - V EXAMINATION - WINTER 2025

Subject Code: 3151912

Date: 21-11-2025

Subject Name: Manufacturing Technology

Time: 10:30 AM TO 01:00 PM

Total Marks: 70

Instructions

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**
- 4. Simple and non-programmable scientific calculators are allowed.**

	Marks
Q.1 (a) Define Manufacturing processes and enlist various manufacturing processes.	03
(b) List out types of Pattern and explain any three pattern with a neat sketch.	04
(c) Explain Investment casting process.	07
Q.2 (a) Explain Hot and Cold working Processes.	03
(b) Discuss about various types of rolling mill arrangements.	04
(c) Distinguish between wire drawing and tube drawing with neat sketches.	07
OR	
(c) Explain the types of forging defects and write name of four products which are manufactured using the forging process.	07
Q.3 (a) Describe the carburizing flame with a neat sketch. Mention the materials which use this flame for welding.	03
(b) Critically compare TIG with MIG welding process.	04
(c) Explain the working principle of Resistance welding. Differentiate between Spot and Seam Welding processes.	07
OR	
(a) Distinguish between welding, soldering, Brazing joining processes.	03
(b) Compare the leftward and rightward welding technique with diagram.	04
(c) Enlist the defects that are generally found in welding. Describe their cause and remedies.	07
Q.4 (a) Write the difference between thermosetting and thermoplastics.	03
(b) Write short note on compression molding.	04
(c) Enlist various plastic processing technologies. Explain injection moulding process with neat sketches.	07
OR	
(a) Discuss about general properties of Plastics.	03

- (b) Explain calendaring process. 04
- (c) Explain briefly the following forging operations with neat sketches: (a) Coining operations: (b) Heading operation; (c) Punching operation (d) Blanking 07
- Q.5** (a) What is casting? List out step by step procedure of sand casting. 03
- (b) Compare the lapping and honing super finishing processes. 04
- (c) Enlist types of super finishing processes. Discuss the selection criteria for appropriate super finishing process. 07

OR

- (a) Explain Blow holes, Shrinkage and warpage in terms of casting. 03
- (b) State the significance of the superfinishing process. 04
- (c) Explain Burnishing process with a neat sketch. 07

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-V (NEW) EXAMINATION – WINTER 2024

Subject Code:3151912

Date:02-12-2024

Subject Name:Manufacturing Technology

Time:10:30 AM TO 01:00 PM

Total Marks:70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

		Marks
Q.1	(a) Briefly Classify manufacturing processes.	03
	(b) Critically compare TIG with MIG welding process.	04
	(c) What is Pattern? Discuss different pattern allowances.	07
Q.2	(a) What is the significance of Manufacturing processes for recent development?	03
	(b) What is meant by a core? Why and when are cores used in foundry?	04
	(c) State principle of Resistance welding. Write comparison between Spot welding with Seam welding.	07
	OR	
	(c) Enlist the properties of moulding sand. Explain any four properties briefly.	07
Q.3	(a) Explain Blow holes, Misrun and warpage in terms of casting.	03
	(b) State elements of Gating system with a neat sketch.	04
	(c) Explain Gas welding process with a neat sketch. State types of Gas flames used in Gas welding.	07
	OR	
Q.3	(a) What is the difference between Brazing and Soldering?	03
	(b) Write short note on Laser Beam welding.	04
	(c) Compare Hot working and Cold working processes.	07
Q.4	(a) Define the followings : Ingot, Bloom and Billet	03
	(b) Explain any one type of extrusion process with a neat diagram.	04
	(c) Enlist Forging operations. Discuss any two operations with neat sketch.	07
	OR	
Q.4	(a) How are seamless tubes produced?	03
	(b) Distinguish between compound die and Progressive die with a neat diagram.	04
	(c) What is Notching operation? Compare Blanking and Piercing operations.	07
Q.5	(a) Define the followings : 1) Spring Back 2) Stamping	03
	(b) Explain with a neat sketch Bending.	04
	(c) Explain Blow moulding process with neat sketch. Also discuss its limitations.	07

OR

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|------------|------------|--|-----------|
| Q.5 | (a) | What are the important properties of Plastics form Engineering point of view. | 03 |
| | (b) | Define the following terms in context with Advance Super finishing technology : 1) Lapping 2) Honing | 04 |
| | (c) | Explain in brief Burnishing and Powder coating. | 07 |

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2023****Subject Code:3151912****Date:11-12-2023****Subject Name:Manufacturing Technology****Time:10:30 AM TO 01:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) State the chvorinov's rule. Discuss it briefly	03
	(b) What is the role of electrode coating in shielded metal arc welding?	04
	(c) Differentiate between punching and blanking operations with respect to punch and die dimensions and applications.	07
Q.2	(a) How is the selection of manufacturing process influenced by i) Material of the work piece ii) Quantity to be produced?	03
	(b) Explain following patterns with neat sketch: i) Match plate pattern ii) Gated patterns	04
	(c) A slab of size 300* 300 * 50 mm is require to be cast from a molten steel using a top riser of 170 mm diameter. If $(d/h) = 2$ for riser, Calculate the freezing ratio.	07
	OR	
	(c) Draw a neat sketch of gating system. Discuss functions of gating system and differentiate between pressurized and unpressurized gating system.	07
Q.3	(a) Discuss the advantages and limitations of A.C. and D.C. power sources.	03
	(b) What is gas welding? Discuss about various types of flames commonly used in gas welding process with specific application of each one.	04
	(c) Explain with neat sketch, steps involve in investment casting process. Also discuss how an investment casting component is differ than a sand casting component.	07
	OR	
Q.3	(a) Differentiate between soldering and brazing.	03
	(b) Differentiate between TIG and MIG welding processes.	04
	(c) Discuss about resistance welding cycle. Also discuss heat balance and its importance in quality of resistance welded joint.	07
Q.4	(a) Explain the effects of strain hardening.	03
	(b) Discuss about various types of rolling mill arrangements.	04
	(c) What is extrusion? Differentiate between forward extrusion and backward extrusion.	07

OR

- Q.4 (a)** Explain the following terms: **03**
 i) Ingot, ii) Slab, iii) Billet
- (b)** Enlist examples of specific product manufactured by the following forging processes and why? **04**
 i) Drop forging
 ii) Machine forging
 iii) Smith forging
- (c)** Explain with neat sketch principle and operation of rolling process. **07**
- Q.5 (a)** Name the two products that can be manufactured by either spinning or deep drawing. Also mention at least one product that cannot be manufactured by spinning but may be manufactured by drawing. **03**
- (b)** Classify the types of plastics along with the properties and applications of plastics. **04**
- (c)** Enlist various plastic processing technologies. Explain injection moulding process with neat sketches. **07**
- OR**
- Q.5 (a)** Explain following pattern allowances in detail; **03**
 i) Draft allowance
 ii) Shrinkage allowance
 iii) Machining allowance
- (b)** Define and explain following finishing operations: **04**
 i) Lapping
 ii) Buffing
 iii) Burnishing
 iv) Polishing
- (c)** Explain with neat sketch compression moulding process. Also enlist advantages, limitations and applications of compression moulding process. **07**

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2022****Subject Code:3151912****Date:11-01-2023****Subject Name:Manufacturing Technology****Time:10:30 AM TO 01:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) Classify manufacturing processes. **03**
(b) List out types of Pattern and explain any three pattern with a neat sketch. **04**
(c) Illustrate Pattern Allowances with a neat sketch. **07**

- Q.2** (a) What is casting? List out step by step procedure of sand casting. **03**
(b) Describe Die casting process with line diagram. **04**
(c) Explain Investment casting process. **07**

OR

- (c) Interpret casting defects along with reason of defects and its remedies. **07**

- Q.3** (a) Distinguish between welding, soldering, Brazing joining processes. **03**
(b) Classify welding and allied processes. **04**
(c) Illustrate Metal inert Gas welding with a neat sketch. **07**

OR

- Q.3** (a) Discuss about Oxy-hydrogen welding. **03**
(b) Classify Resistance welding and explain any seam welding process and its advantages. **04**
(c) Distinguish between Plasma and Laser Beam welding processes. **07**

- Q.4** (a) Explain Hot and Cold working Processes. **03**
(b) Illustrate wire and tube drawing processes. **04**
(c) Classify extrusion processes and explain forward and backward extrusion process. **07**

OR

- Q.4** (a) Define following terms; **03**
Deep drawing, Coining and Embossing
(b) Illustrate Metal working defects with reason and remedies of defects. **04**
(c) Categorize welding of cast iron and aluminum with its limitations. **07**

- Q.5** (a) Discuss about general properties of Plastics. **03**
(b) Describe Injection moulding processes with its pros and cons. **04**
(c) Elaborate Blow moulding process for bottle making process. **07**

OR

- Q.5** (a) Discuss about Riser design of casting. **03**
(b) Distinguish between Lapping, Honing, Buffing super finishing process. **04**
(c) Illustrate Barrel Tumbling and Burnishing process with a neat sketch. **07**
