

# P P SAVANI UNIVERSITY

Third Semester of B. Tech. Examination  
November 2022

SEME2030 Non-Cutting Manufacturing Processes

07/12/2022, Wednesday

Time: 10:00 a.m. To 12:30 p.m.

Maximum Marks: 60

## Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

### SECTION - I

		[05]	CO	BTL
Q - 1	Sand is the most widely used mould material for casting ferrous and nonferrous metals from few grams to few tons. Justify statement with at least five favorable reasons.	[05]	1	3
Q - 2 (a)	State the types of furnaces used in foundries discuss in brief the working of cupola furnace.	[05]	2	2
Q - 2 (b)	It is easy to withdraw the pattern having a taper shape. - Justify the statement with a suitable sketch.	[05]	2	3

OR

Q - 2 (a)	What is core and core print & what is its purpose? Explain any two types of the core with neat sketch.	[05]	1	3
Q - 2 (b)	Define pattern. List different type of pattern and explain with neat sketch.	[05]	1	2
Q - 3 (a)	Chocolate forms are available in hollow shapes. What process should be used to make these chocolates in context of casting processes? Discuss in brief.	[05]	2	4
Q - 3 (b)	Assume you have a method to measure the porosity of casting. How could you use this information to predict the strength of the casting? Explain.	[05]	2	3

OR

Q - 3 (a)	With the help of neat sketch explain various elements of a gating system.	[05]	2	3
Q - 3 (b)	It is required to manufacture 40x40mm cross section of square bar having a length of 500metre. Suggest and explain suitable casting process.	[05]	2	4
Q - 4	A slab of height 350x350x50mm is required to cast from molten steel using top riser of 150 mm diameter. The diameter of the riser is twice the height of the riser. Calculate the freezing ratio.	[05]	1	5

### SECTION - II

Q - 1	Explain Ultrasonic Welding.	[05]	3	3
Q - 2 (a)	Explain with neat sketch various Flames produced in an Oxy-Acetylene Gas Welding.	[05]	4	4
Q - 2 (b)	What is the role of electrode coatings in shielded metal arc?	[05]	3	3
OR				
Q - 2 (a)	Explain with neat sketch Forward & Backward method of Welding.	[05]	4	2
Q - 2 (b)	Differentiate between Reverse Polarity and Straight Polarity of DC Welding.	[05]	4	3
Q - 3 (a)	Explain with neat sketch TIG Welding.	[05]	4	3
Q - 3 (b)	Explain with neat sketch Submerged Arc Welding.	[05]	3	2
OR				
Q - 3 (a)	Explain with neat sketch Laser Beam Welding.	[05]	3	3
Q - 3 (b)	Explain with neat sketch Resistance Seam Welding.	[05]	4	3

Q - 4

Attempt any one.

[05]

- (i) Explain with neat sketch Thermit Welding.
- (ii) Explain with neat sketch Flash Welding.

3 2  
3 3

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CO : Course Outcome Number

BTL : Blooms Taxonomy Level

Level of Bloom's Revised Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create