P P SAVANI UNIVERSITY

Third Semester of B. Tech. Examination

December 2022

SEME2110 Casting and Joining 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.

			CO	BTL
	SECTION – I			
Q – 1	Answer the Following: (Any Five)	**[05]**		
(i)	Classify manufacturing processes into broad categories.		**1**	**1**
(ii)	Define Pattern.		**2**	**1**
(iii)	List different types of patterns.		**2**	**1**
(iv)	What is continuous casting?		**2**	**1**
(v)	Enlist casting defects.		**2**	**1**
(vi)	What is used for feeding molten metal in the mold cavity?		**2**	**1**
Q - 2 (a)	Draw a neat sketch of a cupola and explain the working principle.	**[05]**	**2**	**2**
Q - 2 (b)	Discuss the shell mold casting process step by step.	**[05]**	**1**	**2**
	OR			
Q - 2 (a)	How grain size is effective in pattern making?	**[05]**	**2**	**3**
Q - 2 (b)	Describe a casting technique that is typically used to cast thin-walled cylinders.	**[05]**	**2**	**3**
Q - 3 (a)	Explain the role of sprue in Casting.	**[05]**	**1**	**2**
Q - 3 (b)	What are the financial parameters to select the appropriate manufacturing process?	**[05]**	**1**	**3**
	OR			
Q - 3 (a)	Explain centrifugal casting also mention its application to the industry.	**[05]**	**2**	**3**
Q - 3 (b)	How moisture content affects the mold?	**[05]**	**1**	**2**
Q - 4	Attempt anyone.	**[05]**		
(i)	Enlist types of sand.		**1**	**2**
(ii)	Draw a sketch of shell molding.		**2**	**3**
	SECTION – II			
Q - 1	Write the difference between TIG and Plasma welding. Give any five points.	**[05]**	**3**	**3**
Q - 2 (a)	Explain seam-welding process with neat sketch. Give its application.	**[05]**	**3**	**4**
Q - 2 (b)	Classify welding process. Discuss the principle of arc welding.	**[05]**	**4**	**3**
	OR			
Q - 2 (a)	Write short note on Ultrasonic welding.	**[05]**	**3**	**3**
Q - 2 (b)	State the function of flux during welding.	**[05]**	**3**	**2**
Q - 3 (a)	Explain the different mode of transfer in the welding.	**[05]**	**4**	**3**
Q - 3 (b)	How is polarity defined in case of DC welding source? How is it advantageously used?	**[05]**	**4**	**3**
	OR			
Q - 3 (a)	Explain various flames produced in an Oxy-acetylene gas welding.	**[05]**	**3**	**2**
Q - 3 (b)	Explain the principle of resistance welding.	**[05]**	**4**	**3**
Q - 4	Attempt **any one** short note.	**[05]**		

(i)	Submerge Arc Welding	**3**	**3**
(ii)	Friction welding	**4**	**3**

****

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