

Seat No.: _____ Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV(New) • EXAMINATION – WINTER 2016

Subject Code:2141908

Date:24/11/2016

Subject Name:Manufacturing Processes -II

Time:02:30 PM to 05:00 PM

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		MARKS
Q.1	Short Questions	14
	1 State the use of a core.	
	2 State the function of chills in casting.	
	3 State the difference between green sand and dry moulding sand	
	4 State the importance of cohesiveness of moulding sand.	
	5 How is polarity defined in DC welding source?	
	6 Draw the sketch of a carburizing oxyacetylene flame.	
	7 What is 'arc blow'?	
	8 What is 'misrun' in a casting?	
	9 What is recrystallization temperature?	
	10 State the dimensions of cross section of a 'bloom'.	
	11 Explain fullering.	
	12 What is ramming in mould making?	
	13 What is rapping allowance?	
	14 What is a pattern maker's rule?	
Q.2	(a) Explain when casting is preferred over forming.	03
	(a) Explain the functions of	04
	• Facing sand	
	• Backing sand	
	• System sand, and	
	• Core sand	
	(b) Explain what is a 'pattern'. Explain the advantages and limitations of plasters over plastics as pattern materials.	07
OR		
	(b) State the properties of moulding sand and explain the importance of any four properties for the production of sound castings.	07
Q.3	(a) Explain the principle of Arc welding.	03
	(b) State the parameters affecting the arc in arc welding.	04

	(c)	Sketch the cupola furnace. Describe its construction and working.	07
		OR	
Q.3	(a)	With a neat sketch, explain TIG arc welding.	03
	(b)	Discuss the function of flux during welding. State the ingredients of flux.	04
	(c)	Explain the basic procedure in SAW with a neat sketch. What is “back up” in SAW?	07
Q.4	(a)	Differentiate between hot working and cold working.	03
	(b)	State the material properties which are important in metal forming.	04
	(c)	Explain the effect of strain rate on yield strength of metals and alloys. Explain hot rolling process with a neat sketch.	07
		OR	
Q.4	(a)	State the advantages and limitations of forging process.	03
	(b)	Distinguish between compound die and progressive die with a neat sketch.	04
	(c)	Discuss the defects, causes and remedies of forging defects.	07
Q.5	(a)	Classify plastics.	03
	(b)	Explain, with a neat sketch, transfer moulding process.	04
	(c)	With a neat sketch, explain injection moulding and blow moulding.	07
		OR	
Q.5	(a)	Explain calendaring process.	03
	(b)	Explain glass forming process.	04
	(c)	What is a ceramic? List the commonly used ceramic matrix composites processing techniques. State the applications of ceramic matrix composites.	07