

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER– V (New) EXAMINATION – WINTER 2019

Subject Code: 2152506

Date: 25/11/2019

Subject Name: Foundry 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.

		MARKS
Q.1	(a) What is the benefit of split pattern over a one piece or solid pattern?	03
	(b) Differentiate open and blind risers.	04
	(c) Explain the metallurgical advantages of castings in comparison to welding process	07
Q.2	(a) Why the following allowances are provided on the patterns in sand moulding? 1. Draft 2. Contraction 3. Shaking	03
	(b) Explain any two pattern materials.	04
	(c) Enlist types of pattern. Explain the any Three of them with neat sketch.	07
	OR	
	(c) Write how pattern is different than casting? Explain pattern color coding system.	07
Q.3	(a) Sketch the cross section of a sand mould which is ready for pouring and label the various important parts.	03
	(b) Give comparison between Shell Moulding and Precision Investment Casting.	04
	(c) Explain “Centrifugal Casting” methods with neat sketch along with it's advantages over conventional green sand moulding.	07
	OR	
Q.3	(a) Differentiate between blow holes and pin hole porosity.	03
	(b) Explain High Frequency Induction Furnaces.	04
	(c) Describe casting defects stating their causes and remedies.	07
Q.4	(a) Define and explain the function of riser in casting.	03
	(b) Explain the various stages of heat treatment.	04
	(c) Explain the various Fettling process carried out after casting process.	07
	OR	
Q.4	(a) Explain Directional solidification with neat sketch.	03
	(b) List out various types of heat treatment and explain any one in detail.	04
	(c) Write casting quality inspection techniques. Explain any one NDT in detail	07
Q.5	(a) List out desirable properties of moulding sands.	03
	(b) Differentiate between bottom gating system and part gating system in detail.	04
	(c) What is the role of mechanization in improving the productivity of foundries?	07
	OR	
Q.5	(a) List the common constituents of foundry sand mix.	03
	(b) Explain the types of Gates with neat sketch.	04
	(c) Explain the role of Computer in Casting Industries.	07
