

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V (NEW) EXAMINATION – SUMMER 2019

Subject Code: 2150206
Date: 03/06/2019
Subject Name: Automotive Manufacturing
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	(a) Sketch the cross section of sand mould which is ready for pouring and label the various important parts.	03
	(b) Which are the key features can be improved by using of superfinishing process in the automotive component?	04
	(c) Explain different types of material used for making pattern. with their advantages and disadvantages in foundry technology.	07
Q.2	(a) Calculate the pouring time for a 400 x 200 x 125mm casting using a 25 x 25 mm ingate and a constant head of 125 mm.	03
	(b) Explain LBM (laser beam machining) process.	04
	(c) Prepare the list of different types of gating system used in casting? Also discuss in brief top gate and bottom gate with neat sketch	07
	OR	
	(c) List the defects that are generally found in welding? Describe their cause and remedies.	07
Q.3	(a) What is meant by 'penetration'? Explain its relevance to arc welding.	03
	(b) What do you mean filler metal? Explain its importance in welding, giving its composition.	04
	(c) Describe the principal and working of oxy-fuel gas welding. With neat sketch layout.	07
	OR	
Q.3	(a) List the different types of core and only draw the sketch diagram for any three.	03
	(b) Explain the method of determining the moisture content in moulding sand.	04
	(c) Make a list of all possible casting defects with figure and give their causes and remedies.	07
Q.4	(a) What are chills? State their functions?	03
	(b) List the various processes of metal working? Draw the different arrangements of rolling processes.	04
	(c) Explain step wise procedure of investment casting process in automotive manufacturing.	07
	OR	
Q.4	(a) Explain the backward hot extrusion processes in manufacturing.	03
	(b) Write a short note on rod and tube drawing process.	04
	(c) List down various operation of shearing process and explain any one of them with neat sketch diagram..	07
Q.5	(a) Discuss the material used to made jigs and fixture.	03
	(b) Write a short note on the machine forged process with sketch.	04
	(c) With the help sketch diagram explain the Tungsten inert gas welding process.	07

OR

- Q.5 (a) Explain 3-2-1 locating method for rectangular block. **03**
(b) Which are the consideration taken while designing jigs and fixtures? **04**
(c) Explain in detail the Essential features of Jigs and Fixtures. **07**

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