

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

# GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject Code:2150206

Date:22/11/2016

Subject Name:Automotive manufacturing

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.

- Q.1 Short Questions 14**
- 1 Differentiate between jigs & fixtures.
  - 2 Why hot working & cold working process are necessary for metal
  - 3 Write the function of riser & runner in casting.
  - 4 Name various types of metal forming processes.
  - 5 Write the uses of USM process.
  - 6 What are the various methods of bending.
  - 7 What is the difference between brazing and soldering.
  - 8 List the common pattern materials.
  - 9 Write the principle of clamping.
  - 10 Give the advantages of sheet metal working process.
  - 11 Define coining & embossing.
  - 12 How does seam welding is differ from spot welding.
  - 13 What do you mean by super finishing process.
  - 14 Why is the necessity of sand testing.
- Q.2 (a) Define extrusion and explain the types of extrusion process. 03**  
**(b) Discuss various types of allowances provided in casting & why. 04**  
**(c) Explain with neat sketch TIG welding & write its applications. 07**
- OR**
- (c) Discuss SAW process with neat diagram & write its merits & demerits. 07**
- Q.3 (a) Write the types of jigs & fixtures used in locating & clamping. 03**  
**(b) Define drill bushes and explain with neat sketch any one type of drill bushes. 04**  
**(c) Explain with neat sketch LBM & write its advantages, limitations & product applications. 07**
- OR**
- Q.3 (a) Why are a number of passes required to roll a steel bar. 03**  
**(b) Discuss design of casting. 04**  
**(c) Explain construction, working principle & uses of manual metal arc welding process. 07**
- Q.4 (a) Define: (a) Deep Drawing (b) Bending (c) Stretch forming 03**  
**(b) Compare the similarities & difference between ECM & EDM. 04**  
**(c) Describe the operational features and layout of cupola furnace. 07**
- OR**
- Q.4 (a) Define forgeability and on what factor does it depends. 03**  
**(b) Explain various types of casting defects & its remedy also. 04**  
**(c) Discuss the manufacturing of seamless pipe & tubing with neat sketch. 07**
- Q.5 (a) Differentiate between hot working & cold working process. 03**  
**(b) Give the classification & applications of each gas welding process. 04**

- (c) Explain working principle of investment casting process with neat sketch & write its uses in automotive manufacturing. **07**

**OR**

- Q.5** (a) Discuss types of defects in welding. **03**  
(b) Write a brief note on: (a) Permeability test (b) Fineness test **04**  
(c) Discuss any one type of super finishing process with neat diagram & why it is versatile in advanced manufacturing process. **07**

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