Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII • EXAMINATION – WINTER 2013

Subject Code: 172003 Date: 07-12-2013

Subject Name: Manufacturing Technology-II

Time: 10.30 am - 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 (a) Explain in which areas, the unconventional manufacturing methods are superior than Conventional Manufacturing methods. Also state the demerits. **(07)**

(b) Explain Abrasive Jet Machining process with its parameters, features, merits, demerits and applications along with neat sketch. **(07)**

Q.2 (a) Explain Electro Chemical Machining process with its parameters, features, merits, demerits and applications along with neat sketch. **(07)**

(b) Compare Plasma Arc Machining and Laser Beam Machining with respect to its tools, process, merits, demerits and applications. **(07)**

OR

(b) Explain different criteria for selection of Manufacturing process. **(07)**

Q.3 (a) What is Riser? "Riser location always affects solidification process of casting" Justify. **(07)**

(b) Explain centrifugal casting process. What is the main difference between Semi-centrifugal and centrifuging casting process. **(07)**

OR

Q.3 (a) Explain the factors involved in electrode selection in arc welding processes. **(07)**

(b) Explain working principle, process and application of MIG welding. **(07)**

Q.4 (a) Describe the degrees of freedom for work piece located in space. Draw a simple sketch to show the 3-2-1 locating principle and explain. **(07)**

(b) List various clamping devices used in jigs and fixtures. Sketch any two clamping devices and explain its working. **(07)**

OR

Q.4 (a) Differentiate between Jig and Fixture. Only sketch the different types of jig bushes. **(07)**

(b) Explain the principle of full-proofing in jig design with example. **(07)**

Q.5 (a) Define: 1) Punching, 2) Blanking and 3) Lancing press operations with neat sketch. **(07)**

(b) Explain with neat sketch the concept of progressive die and compound die. **(07)**

OR

Q.5 (a) Classify metal forming process. List the factors influencing rolling process. Explain the effect of roller diameter and metal friction on rolling process **(07)**

(b) Explain working principle, process and application of Deep drawing. **(07)**

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