

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V • EXAMINATION – WINTER • 2014

Subject Code: 153403

Date: 03-12-2014

Subject Name: Foundry and welding Technology

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) Compare the merits and demerits of (i) Metal casting Vs Metal forming and (ii) Metal casting Vs Welding 07
(b) Describe the major activities in metal casting through a flow chart. 07
- Q.2 (a) Explain any two Mold Making Machines with neat Sketch. 07
(b) Explain different hand tools used in molding. 07
- OR
- (b) Select suitable casting process for following components, stating proper reasons. 07
(1) Paper Mill Rolls (2) Watch cases (3) Turbine blade (4) Large steel valve (5) Gear box casing (6) Fly wheel (7) Car engine cylinder
- Q.3 (a) "The quality requirements of core sand are much more stringent than that of molding sand" – Justify with proper reasons. 07
(b) Give the requirements of core sands. Describe briefly the properties of clay-bonded sands, oil sands, resin sands and Co₂-sodium silicate sands. 07
- OR
- Q.3 (a) Compare die casting and full mould process from the point of process, product and applications. 07
(b) With a neat sketch, the salient features of continuous casting process. Can it be used for normal shaped castings? 07
- Q.4 (a) Define welding. State its advantages and limitations compared to riveting and bolting processes. 07
(b) Explain Oxy Acetylene gas welding process with neat sketch. 07
- OR
- Q.4 (a) Describe the selection factors for arc welding electrodes? 07
(b) With reference to DC arc welding, explain following and state their application: 07
(i) DCSP (ii) DCRP
- Q.5 (a) Compare inertia and forged welding process. 07
(b) With neat sketches define terminology of weld joints and types of joints. 07
- OR
- Q.5 (a) Which power source is used for AC arc welding? State its characteristics. 07
(b) Explain different types of welding defects and methods to reduce these defects. 07