

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-V • EXAMINATION – SUMMER • 2014

Subject Code: 152502**Date: 13-06-2014****Subject Name: Tool Design****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) Differentiate between orthogonal and oblique metal cutting operations. **04**
 (b) Explain “3-2-1” principle of location. **05**
 (c) Draw a neat diagram of Die and Punch assembly. **05**
- Q.2** (a) Discuss function of cutting fluid and its types. **07**
 (b) For the following tool signature draw the different views of a single point cutting tool. **07**
 15°, 4°, 8°, 4°, 5°, 4°, 2 mms.
- OR**
- (b) Describe types of cutting tool materials and factor for their selection. **07**
- Q.3** (a) Discuss the factors that consider during manufacturing of limits gauges. **06**
 (b) Explain terminology for limits and different fits. **08**
- OR**
- Q.3** (a) Discuss design aspect for limit gauges. **06**
 (b) Define following terms. **08**
 (i) Interchangeability (ii) Bilateral Tolerance
 (iii) Transition fit (iv) Unilateral Tolerance
- Q.4** (a) Draw and explain **06**
 (i) Latch type clamp (ii) Quick action hand nut
 (b) Define following terms. **08**
 (i) Center of Pressure (ii) Strap strip layout.
 (iii) Piercing and blanking operation.
- OR**
- Q.4** (a) Explain different drill jig bushes. **04**
 (b) Design and draw fixture of welding for suitable component. **05**
 (c) Differentiate between compact and progressive dies. **05**
- Q.5** (a) Explain any one temperature measurement techniques. **06**
 (b) Draw the Merchant circle diagram and state its assumption. **08**
- OR**
- Q.5** (a) Describe type of cutting tool wear and its causes. **06**
 (b) Define following terms. **08**
 (i) Coated tipped tools (ii) Boring tools
 (iii) Circular form tools (iv) Solid tools
