

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER- VI (New) EXAMINATION – WINTER 2019**

**Subject Code: 2161909**

**Date: 09/12/2019**

**Subject Name: Production Technology**

**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.

- Q.1** (a) Draw neat sketch of single point cutting tool geometry. **03**  
 (b) Write different between Orthogonal and Oblique with reference to metal cutting processes. **04**  
 (c) Define Tool life and Explain factors affecting tool life along its effect. **07**
- Q.2** (a) Brief explain different heat zone of metal cutting process with sketch **03**  
 (b) Enlist thread manufacturing processes and explain any one **04**  
 (c) Write function and characteristic of cutting fluid. **07**
- OR**
- (c) What are the different gear manufacturing processes? Explain any two. **07**
- Q.3** (a) List out the velocities involved in metal cutting process and draw velocity relation diagrams **03**  
 (b) Enlist the tool wear mechanisms and Explain any one. **04**  
 (c) Draw the Merchant's circle diagram and derive relation among various forces acting on cutting tool **07**
- OR**
- Q.3** (a) Write Advantage and disadvantages of jig fixtures. **03**  
 (b) Write the function of bush in Jig and Enlist type of bush with sketch. **04**  
 (c) 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**
- Q.4** (a) What is 'tool signature'? Illustrate with an example **03**  
 (b) Differentiate between gear shaving & gear burnishing **04**  
 (c) What is strip layout? Calculate the utilization factor with taking a suitable a blank part. **07**
- OR**
- Q.4** (a) Enlist various elements of jig and Fixture. **03**  
 (b) Compare a combination die and a Compound die **04**  
 (c) Explain Ultra-Sonic Machining process with sketch and its advances, disadvances and application. **07**
- Q.5** (a) What is meant by fool-proofing with reference to jig-fixture? **03**  
 (b) Differentiate between Piercing and Blanking operation **04**  
 (c) What is centre of pressure with reference to press tool? And determine the center of pressure by taking suitable an unsymmetrical blank part with appropriate dimension. **07**
- OR**
- Q.5** (a) Write important functions of dielectric fluid and electrolyte **03**  
 (b) Draw LBM sketch with labels. **04**  
 (c) Explain Electron Beam Machining process with sketch. **07**

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