

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER- IV EXAMINATION – SUMMER 2020****Subject Code: 3141908****Date: 29/10/2020****Subject Name: Manufacturing Processes****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**
- (a) Explain the working and auxiliary motions of machine tools. **03**
 - (b) Differentiate between multispindle drilling machine and Gang drilling machine. **04**
 - (c) List the different methods of taper turning on lathe. Explain about taper turning attachment with neat sketch. **07**

- Q.2**
- (a) What is boring operation? Draw the sketch of boring tool. **03**
 - (b) Explain about dressing and truing of grinding wheel. **04**
 - (c) Explain about column & knee type milling machine. **07**

OR

- (c) Explain about crank and slotted link quick return mechanism in shaper machine. **07**
- Q.3**
- (a) Draw a neat sketch of single point cutting tool and show various angles on sketch. **03**
 - (b) Determine the cutting speed in machining a workpiece of 200 mm diameter rotating at a speed of 100 rpm. Also calculate power, if cutting force is 560 N. **04**
 - (c) Explain the use of catch plate and carrier in turning operation of lathe machine. Discuss the application of angle plate and face plate for machining of elbow pipe. **07**

OR

- Q.3**
- (a) Calculate the change gears to cut a single start thread of 0.5 mm pitch on a lathe having a lead screw of 12 mm pitch. Assume a typical set of gears. **03**
 - (b) Differentiate between steady rest and follower rest. **04**
 - (c) List the various drill operations. Explain any two drilling operations with neat sketch. **07**

- Q.4**
- (a) Sketch the twist drill with its nomenclature. **03**

- (b) Explain the difference between drilling and boring with necessary sketch. **04**
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- (c) Discuss the various milling operations required to manufacture a V-block with necessary sketch. **07**

OR

- Q.4** (a) What is Indexing? Write any two-engineering product application of indexing. **03**
- (b) Explain how to check the parallelism between work table and spindle axis in horizontal milling machine. **04**
- (c) Explain about jig boring machine with neat sketch. **07**
- Q.5** (a) Explain how to cut internal keyway on slotter machine with neat sketch. **03**
- (b) How grinding wheel is specified? **04**
- (c) Explain basic principle of broaching. Draw a neat sketch of internal pull type broach and show various elements on it. Write different applications of broaching. **07**

OR

- Q.5** (a) Classify the metal sawing machine. **03**
- (b) Draw the neat sketch of double housing planner machine. **04**
- (c) Explain about horizontal spindle reciprocating table surface grinding machines with neat sketch. **07**
