

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-III (NEW) EXAMINATION – WINTER 2021****Subject Code:2131903****Date:19-02-2022****Subject Name:Manufacturing Process-I****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.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1**
- (a) Classify the grinding machine in detail. **03**
- (b) Write the specification of drill machine. **04**
- (c) List the various operation performed on lathe machine. Explain any two operation in detail with neat sketch. **07**

- Q.2**
- (a) Draw the sketch of double angle milling cutter. **03**
- (b) List the advantages and limitation of broaching machine. **04**
- (c) Describe the column and knee type milling machine with neat sketch. **07**

**OR**

- (c) Explain the crank and slotted link mechanism of shaper machine with neat sketch. **07**

- Q.3**
- (a) Classify the milling machine in detail. **03**
- (b) Draw the cross section of lathe bed. Which material is used for lathe bed? Justify the lathe bed materials. **04**
- (c) Draw the three view of single point cutting tool and show the various angles on it. Explain the importance of rake and clearance angles. **07**

**OR**

- Q.3**
- (a) Classify the machine tools in detail. **03**
- (b) Differentiate between up milling and down milling. **04**
- (c) Explain the taper turning attachment of lathe machine with neat sketch. **07**

- Q.4**
- (a) What is the meaning of indexing? List the various indexing method. **03**
- (b) Discuss the apron mechanism of lathe machine with neat sketch. **04**
- (c) Classify the sawing machine and explain any one with neat sketch. **07**

**OR**

- Q.4** (a) Differentiate between three jaw and four jaw chuck. **03**  
(b) Explain the gang milling operation with neat sketch. **04**  
(c) List the various types of drilling machine and explain the radial arm drilling machine with neat sketch. **07**

- Q.5** (a) Explain the counter sinking operation of drill machine. **03**  
(b) List and explain the various parts of slotting machine in brief. **04**  
(c) Describe the jig boring machine with neat sketch. **07**

**OR**

- Q.5** (a) Draw the sketch of double housing planner machine. **03**  
(b) Explain the internal centerless grinding machine with sketch. **04**  
(c) What is the meaning of dressing and truing of grinding wheel? List the factors of grinding wheel selection. **07**

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