

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-IV (NEW) EXAMINATION – WINTER 2020****Subject Code:3141908****Date:19/02/2021****Subject Name:Manufacturing Processes****Time:02:30 PM TO 04:30 PM****Total Marks:56****Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What is Boring Process? Compare Boring and Reaming process. **03**
(b) Explain Horizontal Boring Machine with neat sketch. **04**
(c) Explain Different Types of Broaching Machines with neat sketch. **07**
- Q.2** (a) With the help of figure explain “Taper turning by swiveling the compound rest method **03**
(b) Give the comparison between a turret lathe and capstan lathe. **04**
(c) Explain primary and auxiliary motions with reference to machine tool. **07**
- Q.3** (a) Draw a neat sketch of single point cutting tool and show various angles on sketch **03**
(b) Differentiate between multi spindle drilling machine and Gang drilling machine. **04**
(c) Explain about crank and slotted link quick return mechanism in shaper machine. **07**
- Q.4** (a) What is dressing of grinding wheel? Which operation is required to change shape of grinding wheel? **03**
(b) Explain centre less internal grinding operation with neat diagram. **04**
(c) What is reamer? Explain different types of reamer. **07**
- Q.5** (a) Give difference between Shaper and Planner. **03**
(b) Explain about dressing and truing of grinding wheel. **04**
(c) Explain Drilling and its allied operation in details with application. **07**
- Q.6** (a) Enlist the operations performed on Lathe machine. **03**
(b) Write a short note on: “Band Sawing Machine” **04**
(c) With the help of figure explain ‘Hydraulic’ shaper mechanism. **07**
- Q.7** (a) Differentiate between up milling Process and down milling Process. **03**
(b) What is indexing? Describe direct indexing, with example. **04**
(c) With the help of a neat sketch explain the column and knee type milling machine and name its main parts. **07**
- Q.8** (a) State the working principle of milling machine with Neat sketch. **03**
(b) Explain any four types of milling operations using neat sketches. **04**
(c) Explain any one Alignment test of milling machine with neat sketch. **07**

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV (NEW) EXAMINATION – WINTER 2021****Subject Code:3141908****Date:04/01/2022****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.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) Define Tool Life and explain it with necessary equation.	03
	(b) Define Machine tool along with its classification.	04
	(c) Explain cutting tool angle and their importance with suitable sketches.	07
Q.2	(a) Lathe is father/mother of machine tool. Justify	03
	(b) Explain following parts of a lathe by neat sketches: (1) Lathe Bed (2) Carriage (3) Headstock (4) Tailstock.	04
	(c) Name the accessories commonly used to enhance the lathe operation. Explain the different type of mandrels.	07
	OR	
	(c) List the methods of taper turning on lathe machine. Explain with neat sketch the taper turning method that can be used for taper turning long length job.	07
Q.3	(a) List the Common operations that can be carried out on lathe and explain any three with neat sketches.	03
	(b) Explain Jig boring machine with neat sketch.	04
	(c) Name the drilling operations. Explain counter boring and spot facing with neat sketches.	07
	OR	
Q.3	(a) Draw the two conditions of Tumbler reversing mechanism in Lathe machine.	03
	(b) Explain Horizontal boring machine with neat sketch.	04
	(c) Classify drills. Explain nomenclature of twist drill with neat sketch.	07
Q.4	(a) List out the alignment test required for milling machine.	03
	(b) State difference between up milling and down milling.	04
	(c) Explain method of mounting and application of the following cutters used in milling machine: (1) End mills, (2) Slitting saws and (3) Slab milling cutters.	07
	OR	
Q.4	(a) Classify milling machine.	03
	(b) List out various milling machine operations and explain any two.	04
	(c) Explain single indexing and compound indexing in milling machine.	07
Q.5	(a) What is meant by setting the saw teeth? Why it is done?	03
	(b) Which materials are used in the manufacture of grinding wheels? What properties they impart to the wheel?	04

(c) Explain crank and slotted quick return mechanism in shaper. **07**

OR

Q.5 (a) Explain the following terms. (1) Glazing (2) Loading **03**
(3) Dressing

(b) Describe the coding of grinding wheel as per ISI. **04**

(c) Explain working principal of planner. Explain types of planner. **07**
Compare in detail Shaper and Planner.

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**
- (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**

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV (NEW) EXAMINATION – SUMMER 2021****Subject Code:3141908****Date:08/09/2021****Subject Name:Manufacturing Processes****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.
4. Simple and non-programmable scientific calculators are allowed.

MARKS

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|------------|---|-----------|
| Q.1 | (a) What are basic requirements to perform machining? | 03 |
| | (b) Write with help of fig. any two methods of taper turning into lathe machine. | 04 |
| | (c) Explain about crank and slotted link quick return mechanism in shaper machine. | 07 |
| Q.2 | (a) Explain knurling operation in lathe machine. | 03 |
| | (b) Describe how lathe machine tool specified? | 04 |
| | (c) Draw schematic fig for Lathe machine and describe its components. | 07 |
| OR | | |
| | (c) Draw single point cutting tool and explain tool signature as per ASA. | 07 |
| Q.3 | (a) Differentiate between drilling and boring operations. | 03 |
| | (b) Explain horizontal boring machine with neat sketch. | 04 |
| | (c) Draw and explain nomenclature of drill bit. | 07 |
| OR | | |
| Q.3 | (a) At what speed a 20 mm drill will run for cutting steel at 25 m/min surface speed? | 03 |
| | (b) Write with help of fig counter sinking and counter boring operation. | 04 |
| | (c) Explain tapping attachment in drilling machine. | 07 |
| Q.4 | (a) Differentiate Upmilling and Downmilling processes. | 03 |
| | (b) Write any two milling machine operation with fig. | 04 |
| | (c) Explain about crank and slotted link quick return mechanism in shaper machine. | 07 |
| OR | | |
| Q.4 | (a) Explain Gang milling and Form milling Operations. | 03 |
| | (b) What is indexing? Describe direct indexing, with example. | 04 |
| | (c) With the help of figure explain 'Hydraulic' shaper mechanism. | 07 |
| Q.5 | (a) Write advantages and limitations of broaching. | 03 |
| | (b) Explain about dressing and truing of grinding wheel. | 04 |
| | (c) Explain Indian standard marking system for grinding wheels. | 07 |
| OR | | |
| Q.5 | (a) What is broaching? How broaches are classified? | 03 |
| | (b) Write classification of sawing machine. Explain any one. | 04 |
| | (c) Explain any one Alignment test of Lathe machine with neat sketch. | 07 |

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV (NEW) EXAMINATION – SUMMER 2022****Subject Code:3141908****Date:04-07-2022****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.
4. Simple and non-programmable scientific calculators are allowed.

MARKS

- | | | |
|------------|--|-----------|
| Q.1 | (a) Classify basic machine tools used in the workshop. | 03 |
| | (b) Describe primary and secondary motions used in the machine tools. | 04 |
| | (c) Elaborate Horizontal Boring machine with a suitable sketch. | 07 |
| Q.2 | (a) Describe about alignment test of lathe machine. | 03 |
| | (b) Differentiate between Capstan and Turret Lathe. | 04 |
| | (c) Elaborate Operations carried out on lathe machine with a neat sketch. | 07 |
| OR | | |
| | (c) Explain Thread cutting operations done on Lathe machine. | 07 |
| Q.3 | (a) Interpret an application of the basic machine tools. | 03 |
| | (b) Sketch and explain reciprocating sawing machine. | 04 |
| | (c) Elaborate slotter machine tool with a suitable diagram. | 07 |
| OR | | |
| Q.3 | (a) Classify Milling machine as per application and structure. | 03 |
| | (b) Explain with sketch any five operations carried out on Drilling machine. | 04 |
| | (c) Describe Radial Drilling machine with all details. | 07 |
| Q.4 | (a) Differentiate between up milling and down milling. | 03 |
| | (b) Describe milling cutters with a sketch. | 04 |
| | (c) Elaborate Knee and Column horizontal Milling machine. | 07 |
| OR | | |
| Q.4 | (a) Explain helical milling operations with its limitations. | 03 |
| | (b) Explain alignment test of Milling machine with a sketch. | 04 |
| | (c) Illustrate all operations carried out on Milling machine. | 07 |
| Q.5 | (a) Outline the specifications of Lathe machine | 03 |
| | (b) Describe cylindrical grinding machine with a sketch. | 04 |
| | (c) Elaborate Shaper machine with a neat sketch. | 07 |
| OR | | |
| Q.5 | (a) Summarize the specifications of Milling machine. | 03 |
| | (b) Explain types of grinding wheel and its selection process. | 04 |
| | (c) Illustrate surface grinding machine with a neat sketch. | 07 |
