

**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**

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

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