

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV (NEW) EXAMINATION – SUMMER 2021****Subject Code:3142509****Date:08/09/2021****Subject Name:Manufacturing Technology -I****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 |
|---|--------------|
| Q.1 (a) What is boring operation? | 03 |
| (b) Give the comparison between a turret lathe and capstan lathe. | 04 |
| (c) Explain different types of chips formed in metal cutting with conditions. | 07 |
| Q.2 (a) Write specifications of radial drilling machines. | 03 |
| (b) Explain jig boring machine. | 04 |
| (c) Explain primary and auxiliary motion with reference to machine tool. | 07 |
| OR | |
| (c) What do you understand by (1) Gang milling (2) Straddle milling (3) String milling? | 07 |
| Q.3 (a) What is dressing of grinding wheel? | 03 |
| (b) State difference between up milling and down milling. | 04 |
| (c) Explain various types of chucks use on lathe machine. | 07 |
| OR | |
| Q.3 (a) Give the list various types of planers. | 03 |
| (b) Explain centreless internal grinding operation with neat diagram. | 04 |
| (c) Explain why a lathe bed is made from cast iron. Explain the lathe bed with a neat sketch. | 07 |
| Q.4 (a) List the common operations which can be carried out on lathe. | 03 |
| (b) State difference between planer and shaper. | 04 |
| (c) Explain types of bonding process of abrasives with grinding wheel (any three). | 07 |
| OR | |
| Q.4 (a) What is indexing? Why is it required? | 03 |
| (b) Explain single point cutting tool geometry. | 04 |
| (c) Classify drills. Explain nomenclature of twist drill with neat sketch. | 07 |
| Q.5 (a) What is metal cutting? | 03 |
| (b) Write different applications of broaching. | 04 |
| (c) Compare orthogonal and oblique cutting. | 07 |
| OR | |
| Q.5 (a) Give the classification of machine tools. | 03 |
| (b) Discuss basic elements of metal cutting. | 04 |
| (c) Explain types of reamers. | 07 |
