

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III (NEW) EXAMINATION – SUMMER 2019****Subject Code: 2133405****Date: 18/06/2019****Subject Name: Manufacturing and Assembly Drawing****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.

MARKS

- Q.1**
- | | | |
|-----|--|-----------|
| (a) | What is the importance of surface roughness? | 03 |
| (b) | Draw the conventional representation of Bevel gear, worm gear and spur gear | 04 |
| (c) | Draw the conventions for the following: i) Internal Thread ii) Chain Wheel iii) Conical Helical Spring with Rectangular section iv) Diamond Knurling v) Spiral Spring Unwound vi) Bevel Gear vii) Leaf Spring without eye. | 07 |

- Q.2**
- | | | |
|-----|--|-----------|
| (a) | What is meant by direction of lay? | 03 |
| (b) | Differentiate between tolerance and allowance | 04 |
| (c) | Explain Ra Value and Roughness Grade Number. Also give symbols for roughness grade | 07 |

OR

- Q.3**
- | | | |
|-----|--|-----------|
| (c) | Explain GD & T and list out the symbols with neat sketches | 07 |
| (a) | Define Steel. | 03 |
| (b) | Explain Unilateral and Bilateral Tolerance with an example each | 04 |
| (c) | Explain and compare "Hole basis system" and "Shaft basis system" of fits. From manufacturing point of view which system is preferred? Why? | 07 |

OR

- Q.3**
- | | | |
|-----|---|-----------|
| (a) | Draw the Surface roughness symbols for Roughness values Ra 0.025 μ m and 0.4 μ m. | 03 |
| (b) | Write short notes on Datum and Datum features. | 04 |
| (c) | Explain fit and classify its types with neat sketches. | 07 |
- Q.4**
- | | | |
|-----|---|-----------|
| (a) | List the standard parts of a two plate Injection Mould Base | 03 |
| (b) | Explain positive and negative allowance. | 04 |
| (c) | Write short notes on i) Aluminium and its alloys ii) Nickel and its alloys. | 07 |

OR

- Q.4**
- | | | |
|-----|---|-----------|
| (a) | Define Ferrous and Non-Ferrous Metals and give example of each | 03 |
| (b) | What is production drawing of a component? What information must be provided on production drawing of a machine to facilitate its manufacturing and assembly? | 04 |
| (c) | Explain the effect of alloying on Mn, Si, Cr and Mo. | 07 |

- Q.5**
- | | | |
|-----|---|-----------|
| (a) | What are the basic principles of dimensioning in production Drawing ? | 03 |
| (b) | Explain what do you mean by B.O.M . Draw a sample B.O.M | 04 |
| (c) | Draw the symbols for (i) Square Butt weld, (ii) Single Bevel Butt weld, (iii) Single U Butt weld, (iv) Single J Butt weld, (v) Fillet weld, (vi) Spot weld, (vii) Plug weld | 07 |

Q.5

The figure1 shows parts of a tail stock. Assemble the parts and
Draw the sectional front view of tail stock

14

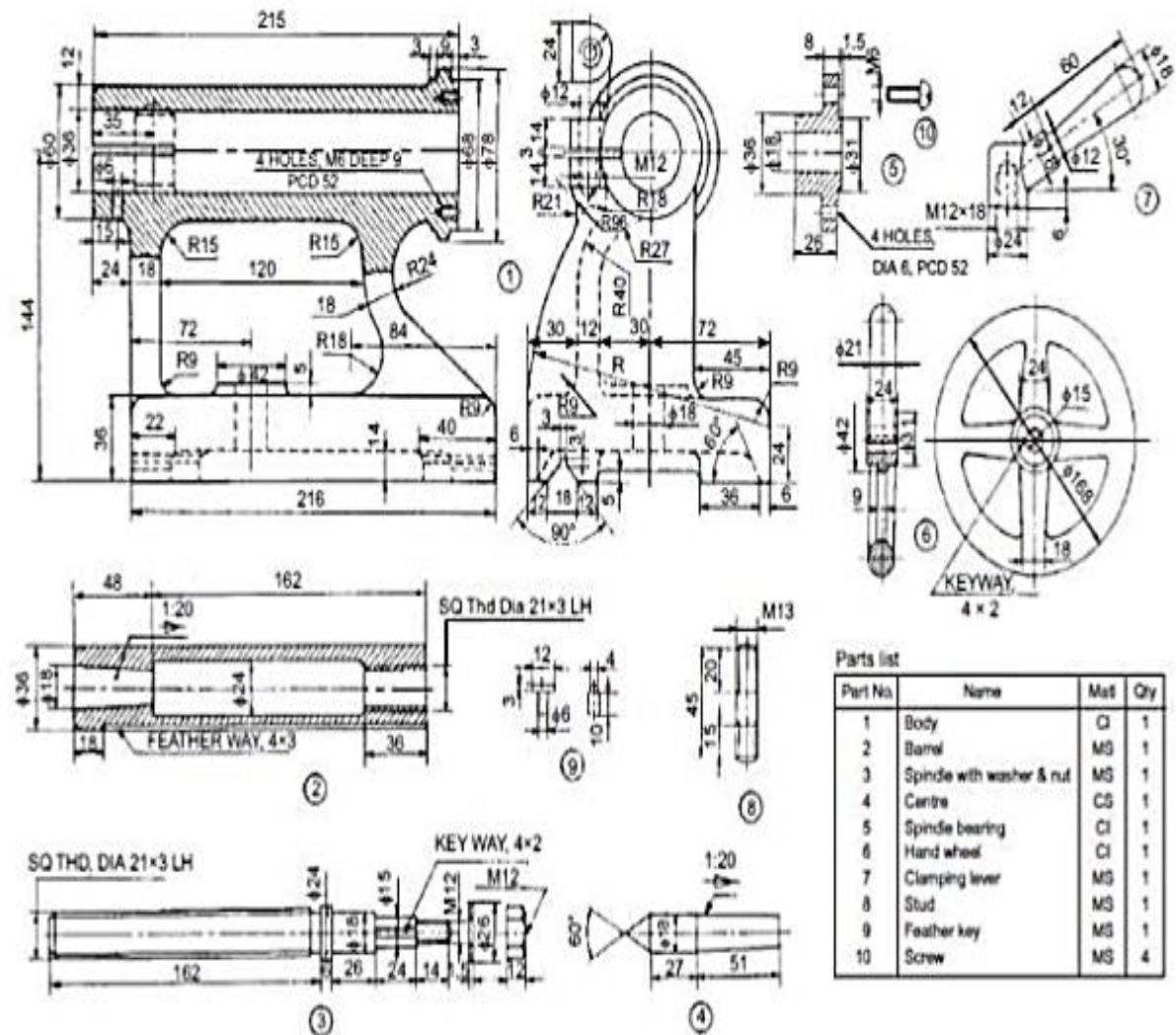


Fig. 1 Lathe tail-stock
