

Assignment – 1 Basic machine tools

Theory

1. Classify machine tools in detail. Explain types of motions in machine tools with examples
2. Explain single point cutting tool geometry.

Assignment – 2 Metal cutting lathes

Theory

1. Explain various work holding devices of lathe machine.
2. Explain different operations performed with the help of a lathe.
3. Explain different taper turning methods. Classify boring machine.
4. Explain in brief various alignment tests carried out on Lathe-Machine to check accuracy level specified by the supplier.
5. Derive the formula to estimate the machine time calculation for turning operation.
6. Differentiate between Capstan and Turret lathe.
7. What is a mandrel? Explain different types of mandrels.

Assignment – 3 Drilling Machines

Theory

1. Enumerate different types of drilling machine. Explain gang drilling machine and multi spindle drilling machine with neat sketch.
2. Explain different operations performed with the help of a drilling machine.

Assignment - 4 Boring Machine

Theory

1. Classify boring machine. Explain horizontal boring machine & jig boring machine with neat sketch.
2. With help of neat sketch explain vertical boring machine and state function of its parts.

Assignment – 5 Milling Machines

Theory

1. Explain different indexing methods used in milling machine.
2. Explain basic methods of milling.
3. Enumerate various milling operations. Explain with neat sketch.
4. Explain different types of milling cutters

Assignment- 6 Planers, Shapers and Slotters

Theory

1. Explain crank and slotted link quick return mechanism in a shaper.
2. Differentiate between a shaper and a planer.
3. Explain hydraulic shaper mechanism.

Assignment – 7 Sawing and Broaching Machines

Theory

1. Explain different types of saw bands in sawing machine.
2. Classify broaching machine. Explain push and pull type broaching with neat sketch.
Describe various advantages and limitations of broaching machine.

Assignment – 8 Grinding Machine & Abrasives

Theory

1. Write a note about grinding wheel parameters influencing the process in brief. Also write standard marking system for grinding wheel with example & manufacturing of grinding wheel.
2. Differentiate between centre type and centre less grinding machine.