GOVERNMENT ENGINEERING COLLEGE BHUJ

Department of Mechanical Engineering

MANUFACTURING PROCESS (BE01000191)

SEM – 4TH

ASSIGNMENT-1

Basic Machine tools and metal cutting Principles CO-1

1. Describe working and auxiliary motions in machines.
2. Differentiate between orthogonal and oblique cutting.
3. Explain the classification of machine tools. Explain types of motion in machine tools with example.
4. What is Tool Signature and Tool Geometry? Explain importance of tool angles for single point cutting tool in brief.

ASSIGNMENT-2 Metal Cutting Lathes CO-2,3,4

1. Give the comparison between a turret lathe and capstan lathe.
2. Explain various types of chucks used on lathe machine.
3. List the common operations which can be carried out on lathe.
4. Draw a line sketch diagram of lathe machine and indicate principle parts on it.
5. List various taper turning methods use in lathe machine and explain taper turning by setting over the tail stock.
6. State the functions of live centre and dead centre in a lathe.
7. Explain the function of a thread chaser in lathe operation.
8. Explain why a lathe bed is made from cast iron. Explain the lathe bed with a neat sketch.
9. Name the parts of an engine lathe. Name the accessories used on a lathe.
10. What tests are carried out to check the alignment of a lathe?
11. Write a short note on: “Apron mechanism”
12. Compare the benefits and limitations of a three jaw chuck vis-à-vis a four jaw chuck.
13. Explain the thread cutting operation on lathe machine.

14. Compare Capstan Lathe, Turret Lathe and Centre Lathe.

ASSIGNMENT-3 Drilling Machines CO-2,3,4

1. Explain the alignment test carried out on a drilling machine. Explain what is deep hole drilling.
2. Explain the specifications of a radial drilling machine with a neat sketch. Explain the difference between drilling and boring.
3. Give the differences between gang drilling and multiple drilling machines.
4. List out various operations carried out on drilling machine. Explain any four.
5. Explain twist drill nomenclature with neat sketch.

ASSIGNMENT-4 Boring Machine CO-2,3,4

1. Explain the various operations carried out on a vertical boring machine.
2. Explain jig boring machine.
3. Explain vertical boring machine.

ASSIGTMENT-5 Milling Machines CO-2,3,4

1. Classify milling machines.
2. Draw a neat sketch of a plain milling cutter and label its various elements.
3. Explain side milling and angular milling operations with neat sketches.
4. Name the devices used for holding and driving various cutters on a milling machine.
5. Draw a neat sketch of a knee and arbor type milling machine and label its parts.
6. State difference between up milling and down milling.
7. Explain simple indexing and compound indexing for a milling machine.

ASSIGNMENT-6 Planers, Shapers and Slotters CO-2,3,4

1. Explain the working principle of a slotting machine with a neat sketch.
2. Compare shaper and planer.
3. Draw a neat sketch of a planer and label its various parts.
4. Explain crank and slotted link quick return mechanism in shaper.
5. Explain the specifications of a shaper.

6. Compare Planers, Shapers and Slotters

ASSIGNMENT-7 Sawing and Broaching Machines CO-2,3,4

1. Give neat sketches of internal pull type broach and indicate the various terms relative to its teeth.
2. Describe working of circular sawing machine with neat sketch.

ASSIGNMENT-8 Grinding Machines and Abrasives CO-2,3,4

1. Explain grinding wheel designation system.
2. Explain truing and dressing of grinding wheels.
3. How grinding wheel is specified? Explain in details.
4. Explain how grinding wheels are classified.

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