MUTHAYAMMAL ENGINEERING COLLEGE
(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)
Rasipuram - 637 408, Namakkal Dist., Tamil Nadu

Department of Mechanical Engineering

Question Bank - Academic Year (2017-18)

Course Code & Course Name : 16MED09 & MANUFACTURING TECHNOLOGY

Year/Sem/Sec : II/ IV / C

UNIT-I THEORY OF METAL CUTTING

Part-A

1. Give details about the nose radius
2. Enumerate is orthogonal and oblique cutting
3. Name the various cutting tool materials.
4. What is the function of chip breakers?
5. Categorize the tool wear
6. How tool life is defined?
7. What are the functions of cutting fluids?
8. distinguish between orthogonal cutting oblique cuttings
9. Name the factors that contribute to poor surface finish in cutting.
10. State any two situations where positive rake angle is recommended during turning.

Part-B

1. Elaborate on the parts of single point cutting with neat sketch (16)
2. Evaluate the types of chips with neat sketch (16)
3. Explain about the geometry of chip formation (16)
4. How would you differentiate between orthogonal cutting and oblique cutting with its neat sketches (16)
5. Describe tool life. Explain the factors affecting tool life.(16)
6. Examine the properties and different types of cutting fluids used in machining process.(16)

UNIT-II TURNING MACHINES

PART-A

1. Enumerate function of feed rod and lead
2. Write about the various types of chucks?
3. Why was power chucks developed?
4. What is difference between a ram type turret lathe and saddle type turret lathe?
5. State the need for tumbler gear mechanism.

6. List the purpose of a mandrel? How many types of mandrels is there in common use?
7. What is the advantage of using a collect chuck?
8. How is the size of a turret lathe specified?
9. What is an apron?
10. List the any four methods by which taper turning is done in a centre lathe.

PART-B

1. Sketch a center lathe and mention various parts (16)
2. Categories the different types of machining operations that can be performed on lathe? and explain any six in detail. (16)
3. Illustrae taper turning operation in a lathe by a taper turning attachment. (16)
4. Enumerate the methods of thread cutting operations in a lathe (16)
5. Evaluate the working of Swiss type automatic screw machine. (16)

UNIT-III SHAPER, MILLING AND GEAR CUTTING MACHINES

PART - A

1. Distinguish between up milling and down milling?
2. Enumerate thread milling?
3. Write down the rule for gear ratio in differential indexing.
4. Define "Face Milling".
5. Classify milling cutters.
6. What are the differences between up milling and down milling?
7. What are the types of boring machine?
8. Write down any four operations that can be performed in a drilling machine.
9. What is meant by sensitive hand feed?
10. Why is sawing a commonly used process?

Part-B

1. Describe the principle of operation of a shaper with a neat sketch. (16)
2. Describe the working principle of vertical milling machine with a neat sketch. (16)
3. Clarify briefly about various drilling operations with neat sketch. (16)
4. Examine the working principle of a Radial drilling machine with a neat sketch. (16)
5. Illustrate the working principle of a gang drilling machine with a neat sketch. (16)

UNIT-IV ABRASIVE PROCESSES AND BROACHING

PART - A

1. What is the process of self-sharpening of the grinding wheel?
2. What are the four movements in a cylindrical center type grinding?
3. What is the main difference between transverse and plunge grinding?
4. What is meant by centre less grinding?
5. State in one word 'Abrasive grains'.
6. What is meant by dressing and truing?

7. Differentiate Lapping and honing.
8. What are the types of surfaces that could be produced using plain cylindrical grinders?
9. State in one word - broaching
10. Classify vertical broaching machine.

PART-B

1. Examine the working principle of rough grinders and discuss any to in briefly (16)
2. Evaluate the working principle of centre less grinding process. (16)
3. Illustrate the working principle of internal grinders. (16)
4. How does the principle of operation of gear hobbing operation performed? (16)
5. Explain the principle of operation of gear shaping operation. (16)
6. Explain the operations of horizontal broaching machine with neat sketch. (16)
7. Enumerate the operations of continuous broaching machine with neat sketch. (16)
8. Evaluate the operations of vertical broaching machine with neat sketch. (16)

UNIT- V CNC MACHINING

PART –A

1. Define NC?
2. what are the classifications of NC machines?
3. What are G-codes and M-codes? Give examples.
4. What is the role of computer for NC machine tool?
5. Name the various elements of CNC machines?
6. What is the role of computer for NC machine tool?
7. What is point –to- point (PTP) system?
8. Mention the main difference between CNC and DNC?
9. What is the difference between incremental and absolute system?
10. .Write down the types of statements in APT language.?

PART-B

11. Explain Numerical Control (NC) Machine Tools?. (16)
12. Programming Fundamentals CNC? (16)
13. Explain Manual Part Programming? (16)
14. Examine the micromachining process. (16)
15. Briefly Illustrate about wafer machining process. (16)
16. Examine micromachining Techniques. (16)
17. Illustrate briefly about the MEMS material. (16)
18. Demonstrate about Lapping, honing, polishing. (16)
19. Briefly enlighten about
    Bulk micromachining (4)
    Surface micromachining (3)
    Micro-molding processes (9)
20. How does the machining performed in Non-lithography based localized micromachining. (16)