

B.E. Fourth Semester (Mechanical Engineering) (CGS)
10838 : Manufacturing Process - II : 4 ME 04

P. Pages : 2

Time : Three Hours



AU - 2571

Max. Marks : 80

- Notes :
1. Answer **three** question from Section A and **three** question from Section B.
 2. Due credit will be given to neatness and adequate dimensions.
 3. Assume suitable data wherever necessary.
 4. Diagrams and chemical equations should be given wherever necessary.
 5. Illustrate your answer necessary with the help of neat sketches.
 6. Discuss the reaction, mechanism wherever necessary.
 7. Use of pen Blue/Black ink/refill only for writing the answer book.

SECTION - A

1. a) What is meaning by machine tool ? How will you classify different types of machine tools. 7
- b) Derive an expression for chip thickness ratio, $\gamma = \frac{\sin \phi}{\cos(\phi - \alpha)}$ 7
where
 ϕ - Shear angle
 α - Rake angle
 γ - Chip thickness ratio

OR

2. a) Describe the forces acting on the cutting tool during turning & facing. Explain with neat diagram. 7
- b) Explain chip formation process in metal cutting showing shear angle, shear plane etc with neat fig. which are the different types of chips ? 7
3. a) List out the various operations done on Lathe, Explain with neat sketch any two operations. 7
- b) Explain the following accessories on Lathe, 6
 - i) Mandrel
 - ii) Steady rest
 - iii) Follower rest
4. a) Describe the special features of Capstan & Turret Lathe, how it is differ from Standard Lathe. 7
- b) Draw a neat & clean sketch of Tailstock of lathe. Explain the functions of tailstock. 6
5. a) Draw a sketch showing tool nomenclature of twist drill, also explain different types of drill, used for various purposes. 6

- b) What is Boring ? How Boring machines are classified ? Draw a neat sketch of floor type Boring machine. 7

OR

6. a) Explain the nomenclature of 'Broach Tool', also explain the Broaching Process. 7
b) Which are the tool holding devices used in drilling machines ? Explain with neat fig. 6

SECTION - B

7. a) Discuss column & knee type plain or horizontal milling machine with neat sketch showing different parts. 7
b) Explain Down milling or climbing process with relative advantages & disadvantages. 7

OR

8. a) Which are the variety of operations performed on milling m/c ? Explain any two of them. 7
b) How milling machines are classified ? Discuss the advantages of milling process. Explain Gear cutting on milling. 7
9. a) Describe the specifications of grinding wheel by quoting example. 5
b) Explain the following terms with respect to grinding wheel. 8
i) Truing ii) Dressing
iii) Loading iv) Glazing

OR

10. a) Draw a neat sketch of centerless grinding. Explain the process, its types & advantages. 8
b) Compare between shaper & slotter. 5
11. a) What is meaning by unconventional machining ? State it's advantages & applications. 6
b) Explain Electrical Discharge Machining process with its principle of working & applications. 7

OR

12. a) What is chemical machining ? How is differ from other machining processes ? 6
b) With neat sketch explain LBM (Laser Beam Machining) set up. 7
