



- Notes : .
1. All questions carry marks as indicated.
  2. Solve Question 1 OR Questions No. 2.
  3. Solve Question 3 OR Questions No. 4.
  4. Solve Question 5 OR Questions No. 6.
  5. Solve Question 7 OR Questions No. 8.
  6. Solve Question 9 OR Questions No. 10.
  7. Solve Question 11 OR Questions No. 12.
  8. Due credit will be given to neatness and adequate dimensions.
  9. Diagrams and chemical equations should be given whenever necessary.

1. a) What are the basic elements of any machining operation? Differentiate orthogonal and oblique cutting. 6

b) With a neat sketch explain principal angles of single point tool and discuss its effects on cutting process. 7

OR

2. a) How do you define tool life? Explain the parameter that affect on tool life. 7

b) Explain the factors which favour formation of continuous chips. Also elaborate common methods to break the chips. 6

3. a) With a neat sketch explain the principal parts of a lathe. 6

b) Name the various lathe accessories. Explain and differentiate between steady rest and follower rest with neat sketch. 7

OR

4. a) Explain with the help of neat sketch working of back gear mechanism in lathe. 7

b) Differentiate between capstan lathe and turret lathe. 6

5. a) With neat sketch explain the Ratchet and pawl feed mechanism of shaper. 7

b) Explain with neat sketch principal parts of a standard shaper. 7

OR

6. a) Compare shaper planer and Slotter. 7

b) Classify different types of planning machines Also List various planning operations. 7

7. a) With neat sketch explain main parts of horizontal milling machine. 7  
b) Give classification of milling cutters. 6

OR

8. a) List out the various milling operations. Also explain face milling operation. 7  
b) Classify milling machine. Differentiate between plain and universal milling machine. 6

9. a) Explain grinding process & classify grinding machines in detail. 7  
b) List out various abrasives used in manufacturing of grinding wheels. 6

OR

10. a) What are various super finishing operations. Also explain Lapping operation with neat sketch. 7  
b) Explain with neat sketch, Electroplating process. 6

11. a) List various drilling machine operations. Explain with neat sketch counter boring & countersinking. 7  
b) Explain with neat sketch principal components of radial drilling machine. 7

OR

12. a) What is broaching? Explain various elements of broach. 5  
b) List out Advantages and Limitations of broaching process. 5  
c) Classify Boring machines. 4

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