

Machining Processes

P. Pages : 2

Time : Three Hours



NIR/KW/18/3371

Max. Marks : 80

- 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. Assume suitable data whenever necessary.
 10. Diagrams and chemical equations should be given whenever necessary.
 11. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Explain mechanics of chip formation with neat sketch. **6**
- b) Explain various types of chips formed during metal cutting. Also explain chip breakers. **7**

OR

2. a) Draw a neat sketch of single point cutting tool and describes its various angles. **6**
- b) Describe various cutting tool materials with their properties. **7**
3. a) How lathes are classified? Describe in brief the different types of lathes. **6**
- b) Differentiate between capstan and turret lathe. Describe capstan lathe with neat sketch. **7**

OR

4. a) State various types of taper turning methods. Explain any one with neat sketch. **6**
- b) Describe sliding gear mechanism used in all geared headstock of lathe machine. **7**
5. a) Explain principle parts of shaper machine with neat sketch. **7**
- b) Explain crank and slotted link mechanism used in shaper machine with neat sketch. **7**

OR

6. a) Explain "open and cross belt drive" mechanizing used in planer machine. **7**
- b) Explain precision slotter. Also compare shaper, planer and slotter. **7**
7. a) Draw a neat sketch of column and knee type horizontal spindle milling machine and explain it. Label its main parts. **6**

b) Draw a neat sketch of plain milling cutter and state its angles. 7

OR

8. a) Differentiate up milling and down milling with neat sketch. 6

b) What do you mean by indexing? What are the various methods of indexing? 7

9. a) Explain various types of abrasives used in manufacturing of grinding wheels. 6

b) Explain grinding process and classify grinding machines in detail. 7

OR

10. a) Explain electroplating process with neat sketch. 6

b) Enlist various super finishing processes. Explain lapping operation with neat sketch. 7

11. a) List various drilling machine operations. Explain with neat sketch counterboring and countersinking. 7

b) Explain with neat sketch principle components of radial drilling machine. 7

OR

12. a) What is boring? Describe vertical boring machine with neat sketch. 7

b) Explain drilling, reaming and boring operation. How do they differ from each other? 7
