



- 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. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Explain working principle of electron - beam machining. State its application. **6**
- b) Explain the abrasive jet Machining with neat sketch. Discuss the process parameters and give its application. **7**

**OR**

2. a) Explain electric discharge machining process, with neat sketch. Also write process variable, merits & its application. **7**
- b) Describe the ultrasonic machining process with neat sketch. What are its, advantage, disadvantages and application. **6**
3. a) What is MIG Welding? Explain its principle of operation with neat sketch. State its advantage & applications. **7**
- b) Explain working principle of Atomic Hydrogen Welding. Also give its advantages, limitation and application. **6**

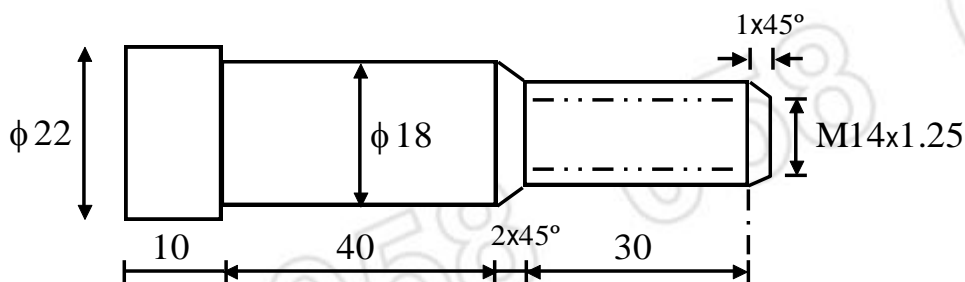
**OR**

4. a) Explain the principle of a laser beam welding and describe the process with the help of neat sketch. What are its advantages. **7**
- b) Write short notes on plasma arc welding with neat sketch. **6**
5. a) Describe with neat sketch the bar feeding mechanism of capstan lathe. **7**
- b) Distinguish between Capstan and turret lathe with neat sketch. **7**

**OR**

6. a) Draw the tool layout for component shown in figure.

9



- b) Write short notes on :  
i) Nano fabrication  
ii) Micro Machining.

5

7. a) Draw a neat sketch to show the details of a die set used in sheet metal on presses.

7

- b) Describe the following press operation :  
i) Punching  
ii) Blanking  
iii) Shaving  
iv) Perforating

7

OR

8. a) Differentiate between simple die, compound die and combination die.

7

- b) Bring out & discuss the difference between bending, drawing & forming operation of sheet metal shaping.

7

9. a) Explain 3 - 2 - 1 principle of location system with neat sketch. Why is it widely practiced.

7

- b) Write a short note on quick acting clamps in jigs & fixtures.

6

OR

10. a) What do you mean by jigs & fixtures? Explain the principles of location applicable for jigs & fixtures.

7

- b) Describe different types of drill jig bushes and their applications with neat sketches.

6

11. a) What do you mean by Super finishing process? Explain the principle of super finishing process.

7

- b) Explain buffing process with neat sketch.

6

OR

12. a) Explain Electroplating process with neat sketch. State its advantages, disadvantages and application.

7

- b) Explain the role of laser in surface modification and give their applications.

6

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