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- 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 Non-traditional Machining process based on need classification and historical development. 7

b) Explain the mechanism of abrasive jet machining with neat sketch. 7

OR

2. a) Explain ultrasonic machining process, its parameters and control. Also explain its effect on materials. 7

b) Explain with neat sketch Electrical discharge Machining. Also state its advantages, limitations and Applications. 7

3. a) Describe working of MIG with its applications? 6

b) Explain with neat sketch Electron Beam welding. Also state its applications. 7

OR

4. a) Explain with neat sketch Atomic Hydrogen welding. State its advantages and application. 7

b) Discuss Electroslag welding with neat sketch. State its advantages and applications. 6

5. a) Explain in brief the main parts of a turret lathe. How does it differ from capstan Lathe. 7

b) What is HERF? Explain the process of Explosive forming. 6

OR

6. a) Explain the Bar feeding mechanism of capstan Lathe. Draw neat sketch. 7

b) Explain the process of Electromagnetic forming. 6

7. a) Explain the process of Deep Drawing with its applications. **6**
b) Explain the process of sheet metal cutting operation with a punch and Die. **7**

OR

8. a) Explain the process of sheet Bending with its applications. **6**
b) Explain different types of dies according to the method of operation. **7**
9. a) Explain the principal of location of a workpiece within a jig or fixture. **7**
b) What are different types of clamps. Discuss any three types of clamps with neat sketch. **6**

OR

10. a) Explain Drilling Jigs and Design principal for Drilling Jigs. **7**
b) Discuss the classification of milling fixtures. **6**
11. a) Explain the principle of super finish process with its application. **7**
b) Explain the process of Buffing with its advantages, disadvantages and application. **7**

OR

12. a) Explain the Application of Laser in surface modification. **7**
b) Explain the principle of operation of Electroplating with its advantages, disadvantages and applications. **7**
