B.E. (Mechanical Engineering) Fifth Semester (C.B.S.)

Advanced Production Processes

P. Pages : 2 **NJR/KS/18/4480**

Time : Three Hours * 0 0 4 7 * 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. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Explain with neat sketch Electrical Discharge Machining (EDM) process? Also give its advantages, disadvantages and limitations. **7**

b) Explain Water Jet Machining (WJM) with neat sketch, stating its advantages. Also describe its recent development Hydro-Dynamic Jet Machining (HJM). **7**

OR

2. a) What is the need for having Non-conventional machining processes? **3**

b) Explain the principle of ultrasonic machining with the help of neat sketch. What are its advantages and applications. **6**

c) What is LASER? Explain laser Beam machining process and also give its limitation. **5**

3. a) Compare the two inert gas welding processes TIG and MIG, giving their similarities and differences and applications. **7**

b) Explain Electroslag welding with neat sketch. Also state its advantages and applications. **6**

OR

4. a) Explain plasma Are Welding with a neat sketch giving its advantages and disadvantages. **7**

b) Explain the principle of **6**
i) Atomic Hydrogen Welding
ii) Electron Beam Welding.

5. a) Differentiate Capstan and Turret Lathe on the basis of constructional features and applications. **6**

b) Write short notes on: **7**
i) Micro machining.
ii) Nanofabrication.

OR

6. a) Describe the Turret Indexing mechanism with a neat sketch. **6**

b) What do you mean by High Energy Rate Forming? Explain confined and non-confined systems of explosive forming. **7**

7. a) What is sheet metal forming? Explain with neat sketches stretch forming and hydro mechanical forming. **6**

b) Explain with neat sketches working of progressive die and compound die. **7**

OR

8. a) What do you mean by sheet metal Drawing. Explain shallow drawing, deep drawing, re-drawing and ironing in deep drawing operations. **6**

b) With the help of sketches, describe briefly various defects in drawn parts. **7**

9. a) What is the need for Jig and fixtures? Describe the various principles of Jig and fixture design. **7**

b) What is the use of drilling Jigs? Explain in detail along with sketches various types of Drill Jigs. **7**

OR

10. a) Explain principles of Location in Jigs and fixtures. **7**

b) What are locators and clamps? Describe any three types of quick acting clamps with sketches. **7**

11. a) Explain the application of LASER in surface modification. What are its different methods. **6**

b) Explain Honing process with neat sketch. Also give its advantages, disadvantages and limitations. **7**

OR

12. a) Explain the operation principle of Buffing and electroplating process. Also state its advantages, disadvantages and applications. **6**

b) Differentiate between Honing and Lapping process with its application. **7**

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