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Question Paper Code	12874
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**B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2024**

Third Semester

**Mechanical Engineering**

**20MEPC301 - MANUFACTURING PROCESSES**

Regulations - 2020

Duration: 3 Hours

Max. Marks: 100

**PART - A (10 × 2 = 20 Marks)**

Answer ALL Questions

	Marks	K- Level	CO
1. Provide an example application of casting in the automotive industry.	2	K2	CO1
2. What is the primary basis for classifying welding processes?	2	K1	CO1
3. What is re-crystallization temperature?	2	K1	CO2
4. What is the difference between punching and blanking?	2	K2	CO2
5. Draw the Mechanics of chip formation.	2	K1	CO3
6. List the types of chips produced during machining.	2	K1	CO3
7. Compare Boring and reaming operation.	2	K2	CO4
8. Name any two milling cutters.	2	K1	CO4
9. Outline various grinding processes.	2	K2	CO5
10. What is the principle of lapping process?	2	K1	CO5

**PART - B (5 × 13 = 65 Marks)**

Answer ALL Questions

11. a) i) Explain the different pattern allowances.	6	K2	CO1
ii) Discuss the different types of patterns and their applications.	7	K2	CO1
<b>OR</b>			
b) Explain the following :			
i) Friction Stir Welding	7	K2	CO1
ii) Laser Welding	6	K2	CO1
12. a) Discuss the principles and applications of the following processes:			
i) Rolling	6	K2	CO2
ii) Extrusion	7	K2	CO2
<b>OR</b>			
b) Explain the Stretch Forming operations with neat sketch.	13	K2	CO2
13. a) What essential characters a cutting tool material must have? Name and explain any three tool materials and their composition and uses.	13	K3	CO3

*K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create*

**12874**

**OR**

- b) i) Explain any one thread cutting method with neat sketch. 6 K2 CO3  
ii) Draw and explain the features of Swiss Type automatic lathe. 7 K2 CO3

14. a) Compare the fundamental differences between a shaper, planer, and slotter in terms of their principle, operations and applications. 13 K2 CO4

**OR**

- b) Describe the basic construction of a gear shaping machine. What are its key components and their functions? 13 K2 CO4

15. a) Outline various factors that influence its selection. A grinding wheel is specified by W-S-30-R-7V-17. What does each letter indicate? 13 K2 CO5

**OR**

- b) Discuss the concept of surface broaching machines, explaining their advantages and typical uses. 13 K2 CO5

**PART - C (1× 15 = 15 Marks)**

16. a) With neat sketch explain lapping and honing process with its industrial applications. 15 K3 CO6

**OR**

- b) Explain how rings are rolled. 8 K3 CO2  
Explain how the threads are rolled. 7 K3 CO2