

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/  
COMMERCIAL PRACTICE, NOVEMBER – 2024**

**ADVANCED PRODUCTION PROCESSES**

[Maximum Marks : 100]

[Time : 3 hours]

**PART – A**  
(Maximum Marks : 10)

**I.** Answer **all** questions in one or two sentences. Each question carries 2 marks.

1. Define automation.
2. List any four gear finishing operations.
3. State the applications of broaching.
4. Briefly describe the dressing of grinding wheel.
5. Explain degrees of freedom in robotics technology. (5x2=10)

**PART – B**  
(Maximum Marks : 30)

**II.** Answer any **five** of the following questions. Each question carries 6 marks.

1. Explain reconfigurable machines and systems.
2. List various work holding devices.
3. Describe principle of broaching.
4. Mention the following press operations.  
(a) Piercing (b) Bending (c) Coining.
5. Explain the principle of ultrasonic machining with a neat sketch.
6. Explain grit, grade and structure of a grinding wheel.
7. List out the field of applications of robots.

(5x6=30)

**PART – C**

(Maximum Marks : 60)

(Answer **one full** question from each unit. Each full question carries 15 marks)

**UNIT – I**

- III.** (a) Explain the parts of a capstan lathe with a neat sketch. (8)  
(b) Reveal your understanding about bar feeding mechanism of a turret lathe. (7)

**OR**

- IV.** (a) Describe Hydraulic copying system with the help of necessary sketch. (8)  
(b) Mention the main components of a machining centre. (7)

**UNIT – II**

- V.** (a) With the help of a figure explain internal pull broach. (8)  
(b) Differentiate jigs and fixture. (7)

**OR**

- VI.** (a) Explain the working of Compound die with suitable figure. (8)  
(b) Sketch and explain a gear hobbing machine. (7)

**UNIT –III**

- VII.** (a) Write the principle of cylindrical grinding with a neat sketch. (8)  
(b) Describe various types of natural and artificial abrasive used in a Grinding wheel. (7)

**OR**

- VIII.** (a) Explain electric discharge machining with the help of neat sketch. (8)  
(b) Discuss about lapping and honing operations. (7)

**UNIT – IV**

- IX.** (a) Explain open loop and closed loop NC machine feedback systems with neat sketch. (8)  
(b) Give an explanation of Automated Guided Vehicles (AGVs). (7)

**OR**

- X.** (a) Describe about various types of joints used in robots with suitable sketches. (8)  
(b) Explain the components of FMS. (7)

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