

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/  
MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER – 2022**

**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. List any four work holding devices used in capstan lathes.
2. Define Flexible manufacturing System.
3. List any two non-conventional methods of machining.
4. Write the basic function of a jig.
5. Differentiate punching and blanking.

(5 x 2 = 10)

**PART-B**

[Maximum Marks: 30]

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

1. Compare Engine lathe and turret lathe.
2. Draw and explain the nomenclature of the broach tooth.
3. Discuss about different types of abrasives used in the manufacturing of grinding wheel.
4. State the advantages of CNC machines over conventional machine tools.
5. Explain the turret head indexing mechanism with the help of a neat sketch.
6. Describe the principle of gear shaping by gear wheel type cutter.
7. Explain the principle of Electrical Discharge machining with a neat sketch.

(5 x 6 = 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) Describe Bar feeding Mechanism with the help of neat sketch. (7)

**OR**

- IV. (a) Explain the layout of a swiss type automatic screw machine. (10)  
(b) Mention the characteristics of a machining centre. (5)

**UNIT – II**

- V. (a) Explain the working of compound die with a suitable figure. (10)  
(b) List the difference between jigs and fixtures. (5)

**OR**

- VI. (a) Explain Horizontal broaching with the help of neat sketch. (8)  
(b) List various types of drill jigs. Explain plate jig and template jig with figure. (7)

**UNIT- III**

- VII. (a) Describe the working of external cylindrical grinder with suitable figure. (10)  
(b) Explain briefly about the different types of bonding materials used in the manufacturing of grinding wheels. (5)

**OR**

- VIII. (a) Explain Laser beam machining with the help of neat sketch. (8)  
(b) Discuss about hand lapping and Machine lapping operations. (7)

**UNIT - IV**

- IX. (a) Explain the elements of CIM system. (10)  
(b) State the advantages and limitations of FMS. (5)

**OR**

- X. (a) Explain the various components of a CNC machine with block diagram. (10)  
(b) List any five applications of robots. (5)

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