

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE, APRIL - 2026**

ADVANCED PRODUCTION PROCESSES

[Maximum marks: 100]

[Time: 3 Hours]

PART – A

(Maximum marks: 10)

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

1. List any four tool holding devices used in turret and capstan lathe.
2. Explain the term ‘tool layout’.
3. Differentiate between piercing and blanking.
4. Explain the purpose of truing process in a grinding wheel.
5. What is G code and M code related to part programming. (5 x 2 = 10)

PART – B

(Maximum marks: 30)

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

1. Explain turret head indexing mechanism with the help of suitable figure.
2. State the advantages of jigs and fixtures.
3. Illustrate a pull type broaching tool with a neat diagram.
4. Discuss about lapping and honing.
5. Explain the principle of electroplating with a suitable diagram.
6. State the advantages of CNC machines over conventional machine tools.
7. Explain the various types of robotic joints with a neat diagram. (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 capstan lathe with a neat sketch. (8)
- (b) Explain pantograph copying system with the help of a suitable diagram. (7)

OR

- IV.** (a) Explain bar feeding mechanism of a turret lathe. (8)
(b) Explain hydraulic copying system with the help of a neat figure. (7)

UNIT – II

- V.** (a) Explain principle of location of rectangular block in jigs. (8)
(b) Explain the working of progressive die with a suitable figure. (7)

OR

- VI.** (a) Explain the principle of gear hobbing. State its two advantages and disadvantages. (8)
(b) Explain jig boring machine with a neat sketch. (7)

UNIT - III

- VII.** (a) Briefly explain the working of centerless grinder with the help of a neat figure. (8)
(b) Explain electric discharge machining with the help of neat sketch. (7)

OR

- VIII.** (a) Explain the lapping and honing operation with suitable figures. (8)
(b) Explain the working of a cylindrical type grinding machine with a neat sketch. (7)

UNIT – IV

- IX.** (a) Briefly describe the basic elements of NC machine with block diagram. (8)
(b) State the advantages of CNC machines over conventional machine tools. (7)

OR

- X.** (a) Explain FMS, what are the basic components of FMS? (8)
(b) Discuss about computer aided process planning. (7)
