

TED (15) – 4023

Reg. No.

(REVISION — 2015)

Signature

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2018

METALLURGY AND MACHINE TOOLS

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

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

1. What is eutectoid steel ?
2. What are the different types of chips ?
3. Write different parts of carriage of a lathe.
4. Define the process reaming.
5. Give two specifications of a shaper.

(5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Explain BCC and FCC.
2. State the objectives of heat treatment process.
3. List the work holding devices used in lathe.
4. Describe the methods of application of cutting fluids.
5. Write different types of drilling machine.
6. Name different types of milling cutters.
7. Compare slotter and shaper.

(5×6 = 30)

PART — C

(Maximum marks : 60)

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

UNIT — I

- III (a) List different types of crystal defects. Describe interstitial defect and substitutional defect. 8
- (b) Explain various stages of manufacturing of metal powder. 7

OR

- IV (a) Draw the iron-carbon equilibrium diagram showing various phases and critical lines. 8
- (b) Explain : 7
- (i) Nitriding (ii) Cyaniding

UNIT — II

- V (a) Draw the single point cutting tool nomenclature. 8
- (b) State desirable properties of cutting tool. 7

OR

- VI (a) Explain briefly different types of lathe. (No sketch needs) 8
- (b) List the different taper turning methods. Explain taper turning by form tool. 7

UNIT — III

- VII (a) Draw a line diagram of a radial drilling machine and mark all parts. 8
- (b) Explain : 7
- (i) Plain milling (ii) Gang milling

OR

- VIII (a) Draw a line sketch of a vertical milling machine and mark all parts. 8
- (b) List the tool holding devices in drilling machine and explain any one with sketch. 7

UNIT — IV

- IX (a) Draw a neat sketch of a slotting machine and mark all parts. 8
- (b) Explain the working principle of a shaping machine. 7

OR

- X (a) Describe different types of shaper operations. 8
- (b) List work holding devices of a planer. Explain anyone with line sketch. 7