TED (15) – 6024

(REVISION — 2015)

Reg. No. .....

Signature .....

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

CAD/CAM

[*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. Write a configuration of PC available in the market.
2. Describe top down approach in product design.
3. Define numerical control.
4. Differentiate G02 and G03
5. Why stepper motor is used with open loop control system ? (5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Describe wireframe, surface modeling and solid modeling.
2. Draw and explain product development spiral.
3. Differentiate between a lathe and a turning centre.
4. What is cutter diameter compensation or cutter diameter offset ? How this compensation is applied in part programming ?
5. Describe point to point and straight cut NC machine.
6. List the advantages of CAM.
7. Explain stroke writing and raster scan in graphic display. (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) Explain input devices in CAD. 8

(b) Compare the working of CRT monitor and LCD monitor. 7

OR

Marks

IV (a) Explain about graphic work station and its components with diagram. 8

(b) Explain the benefits of CAD in industry. 7

UNIT — II

V (a) Draw product life cycle graph and explain with a real world example. 8

(b) Explain :

(i) Variant process planning (ii) Generative process planning 7

OR

VI (a) Identify application of CAM in manufacturing support. 8

(b) "Sequential product development process (Sequential Engineering) may not suit the present global scenario". Justify the statement with an example. 7

UNIT — III

VII (a) Explain vertical and horizontal machining centre with suitable diagram. 8

(b) Explain the machine axis conventions. 7

OR

VIII (a) Explain the components of an NC system with neat diagram. 9

(b) List the advantages of CNC. 6

UNIT — IV

IX (a) Explain absolute programming and incremental programming with an example. 10

(b) Differentiate between stepper motor and servo motor. 5

OR

X Holes are to be drilled at positions A, B, C and D (Co-ordinates given in mm). Write a part program without using any cycles available in the controller.

Assumptions : (i) no tool length compensation (ii) top surface of the work piece is z = 0 (iii) depth of drilling is 5mm. (iv) the machine is a vertical milling centre (v) other data required may be suitably assumed.

(Explanation is to be provided on right side of each block of program.) 15