22563

23242

3 Hours / 70 Marks Seat No. | | | | | | | | |

Instructions – (1) All Questions are *Compulsory.*

(2) Answer each next main Question on a new page.

(3) Illustrate your answers with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following: **10**

a) State any four functions of dielectric fluid.

b) List various gear finishing methods.

c) Write basis component of CNC Machine.

d) Write any two examples of each.

i) Open loop system

ii) Closed loop system.

e) Define "work zero" and "machine zero" position.

f) Write meaning of following codes.

i) M05

ii) M-30

iii) G28

iv) G40

g) State the types of Automation

Marks

2. Attempt any THREE of the following: **12**

a) Explain working principle of LBM with neat sketch.

b) Compare between UP milling and DOWN milling.

c) Explain close loop system with neat sketch.

d) Explain need of cutter radius compensation given for CNC milling.

3. Attempt any THREE of the following **12**

a) Explain gear shaping by pinion method with suitable sketch.

b) Differentiate between Absolute mode and Incremental mode in CNC.

c) Explain concept of ''DNC''.

d) Define Automation, also state its need.

4. Attempt any THREE of the following: **12**

a) Explain Gear shaving process.

b) Explain Internal Mechanism of universal dividing head.

c) Explain re-circulating ball screw arrangement in CNC machine.

d) Differentiate between canned cycle and subroutine cycle.

e) Explain T-slot milling operation with sketch.

Marks

5. Attempt any TWO of following: **12**

a) Draw neat sketch of EDM, and explain the process w.r.t. its principles, applications and limitations.

b) Explain Gear Hobbing. State it's advantages and limitations.

c) Prepare a part program to machine the workpiece shown in Fig. No. 1 on CNC lathe.

Assume suitable cutting parameters.

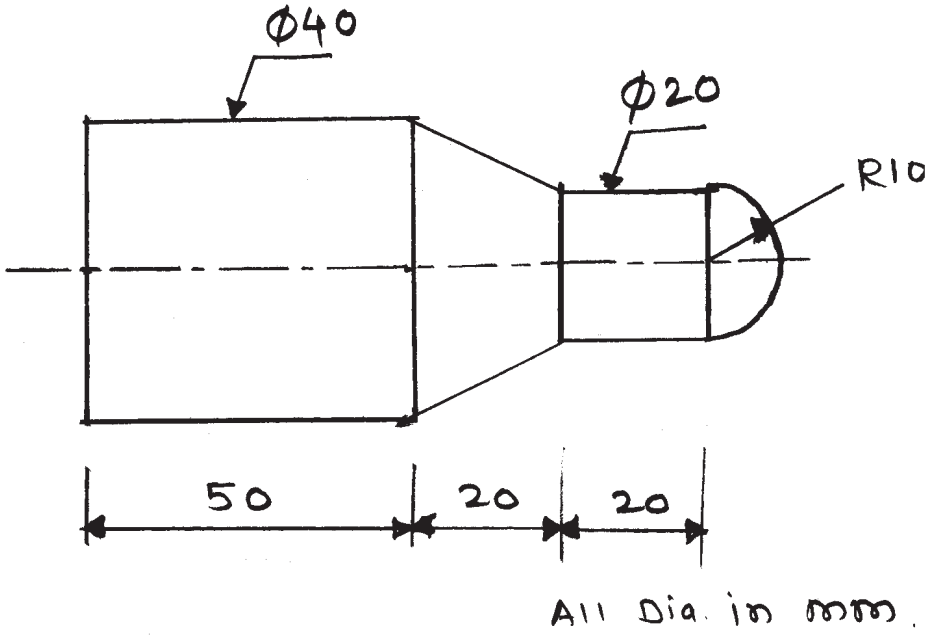

Fig. No. 1

6. Attempt any TWO of the following: **12**

a) Explain working of PAM. State it's advantages and limitations.

b) With suitable example, explain the steps for compound indexing.

c) Explain Group Technology on the basis of -

i) part families.

ii) part classification and coding.