22448

23242

3 Hours / 70 Marks Seat No. ☐☐☐☐☐☐☐

Marks

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

a) State the need of non-traditional machining process.

b) Define continuous and contouring system.

c) List importance of Non-conventional machining.

d) State methods used for surface finishing.

e) Define CNC machines.

f) List importance of special purpose machine.

g) State the meaning of G90, M03.

Marks

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

   a) Explain the principle of ECM with a neat sketch.

   b) Describe the incremental coordinate system of CNC machine.

   c) Explain working of Automatic tool changing device.

   d) Define cutter tool compensation? Why it is required in CNC machine part programming?

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

   a) Differentiate between EDM and WEDM processes.

   b) Draw a layout of AJM process.

   c) Compare closed loop CNC system with open loop CNC system.

   d) Explain with sketch tool presetting procedure for the CNC machine.

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

   a) List advantages and disadvantages of CNC machine

   b) Describe LBM process of non traditional machining with neat sketch.

   c) Develop the part program for machine the part given in Figure No. 1 on a CNC milling machine.
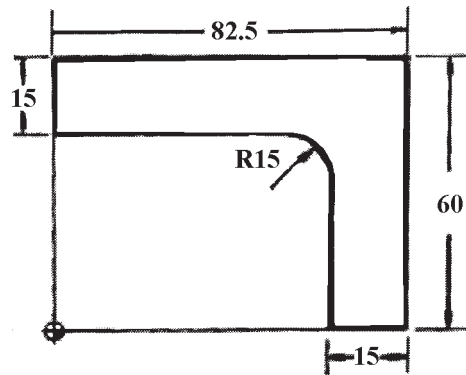
Fig. No. 1

   d) State needs of surface finishing.

   e) Explain with neat sketch lapping process also list its merits and demerits.

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

   a) Distinguish subroutine and canned cycle used in CNC part programming.

   b) Describe with suitable example the steps for compound indexing.

   c) Differentiate between capstan and turret lathe. (Six points each)

Marks

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

a) Prepare a part program for machining component as shown in Figure no. 2 use following data : cutting speed 1000 rpm, feed : 40 mm/min, thickness of component 2 mm, tool reference position is 1 mm above the surface of the work piece. Assume suitable data if any. Neglect cutter radius compensation.
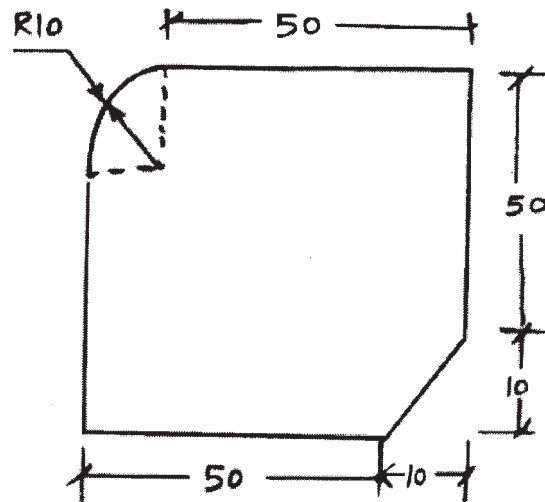

Fig. No. 2

b) Describe the gear finishing process and state the need of gear finishing with example.

c) State bar feeding mechanism used in capstan lathe and turret head indexing mechanism.

————