Seat No.: _____ Enrolment No._____

# GUJARAT TECHNOLOGICAL UNIVERSITY

**ME – SEMESTER – II(New)• EXAMINATION – SUMMER - 2020**

**Subject Code:3720802** **Date: 27/10/2020**

**Subject Name: Computer Aided Manufacturing**

**Time: 02:30 PM To 05:00 PM** **Total Marks: 70**

**Instructions:**

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

| | | | |
|---|---|---|---|
| Q-1 | (a) | Draw a block diagram of a CNC machine tool. State benefits and application of CNC machines. | 07 |
| | (b) | Designate the axis of a CNC lathe with neat sketch. Compare CNC and conventional lathe machines in regard to hardware. | 07 |
| Q-2 | (a) | State various compensations used in CNC machines. Explain tool length compensation with neat sketch. | 07 |
| | (b) | Explain briefly spindle drive and feed drive of the CNC machine tools. | 07 |
| | | OR | |
| | (b) | Explain automatic tool changer and automatic pallet changer in brief. | 07 |
| Q-3 | (a) | Write a manual part program for finishing the component as shown in figure -1 by using metric and absolute programming. Take spindle speed 600 rpm and feed rate as 0.2 mm/rev. | 07 |

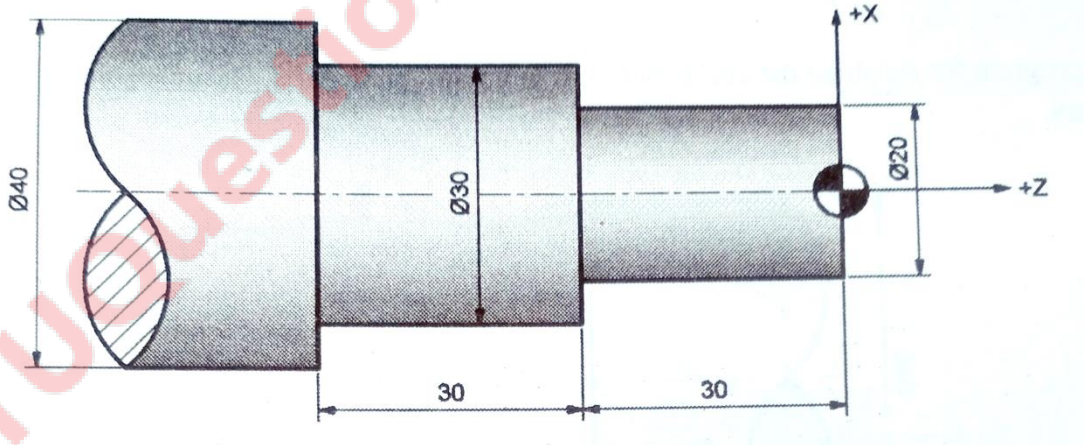


**Figure - 1.**

| | | | |
|---|---|---|---|
| | (b) | Describe incremental and absolute optical encoders. | 07 |
| | | OR | |
| Q-3 | (a) | What is canned cycle? Explain canned cycle for milling with neat sketch. | 07 |
| | (b) | Explain laser interferometer in brief. | 07 |
| Q-4 | (a) | What is difference between CNC and DNC? Enlist the components of DNC. | 07 |
| | (b) | Explain mirroring and subroutine with suitable example. | 07 |

OR

| | | | |
|---|---|---|---|
| Q-4 | (a) | Explain tolerance specification in feature based manufacturing. | 07 |
| | (b) | What is macro? Explain macro used in CNC programming with suitable example. | 07 |
| Q-5 | (a) | Discuss the concept of group technology along with its benefits in brief. | 07 |
| | (b) | Draw a block diagram of an automated part program generation using high end software like Creo/NC or Mastercam. | 07 |

OR

| | | | |
|---|---|---|---|
| Q-5 | (a) | State various types and attributes of features. What do you mean by composite features? | 07 |
| | (b) | Discuss feature based process planning and assembly planning. | 07 |

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