TE MTRX / SEM-VI / CBSGS / DT- 10/5/2019

Duration: - 03 Hours   **Total marks assigned to the paper: 80**

N.B. (1) Question No. 1 is **compulsory**.
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(2) Attempt any **THREE** questions from remaining **Five** questions.

(3) Clearly mention the **assumption** made if any.

(4) Draw **neat** sketches wherever **applicable**.

Q1. Attempt **ANY FOUR** from the following:

(a) What are the factors considered while designing the structure of CNC Machine?   05

(b) Explain different types of insert material.   05

(c) What is absolute and incremental coordinate system. Explain with simple example.   05

(d) Write the Pro's and Con's of CNC machines.   05

(e) What are the optimum cutting conditions can be obtained on CNC Machine but not on conventional machines?   05

Q2. (a) What is objective of Maintenance. Explain Total Productive Maintenance.   10

(b) List out different types of tape readers and explain reading methods in NC.   10

Q3. (a) What is Inductosyn. Explain its operating principle   08

(b) Explain X-offset and Z-offset setting procedure for grooving operation.   08

(c) Explain linear transducer used in CNC machines.   04

Q4. (a) Differentiate in subprogram and MACROS with respect to CNC programs with suitable example.   08

(b) Explain nomenclature of turning insert CNMG120408.   08

(c) Write a short note on cutter compensations used in CNC programming.   04

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Q5. **(a)** Write NC part program using G and M codes in absolute mode for the following component shown in figure. **10**
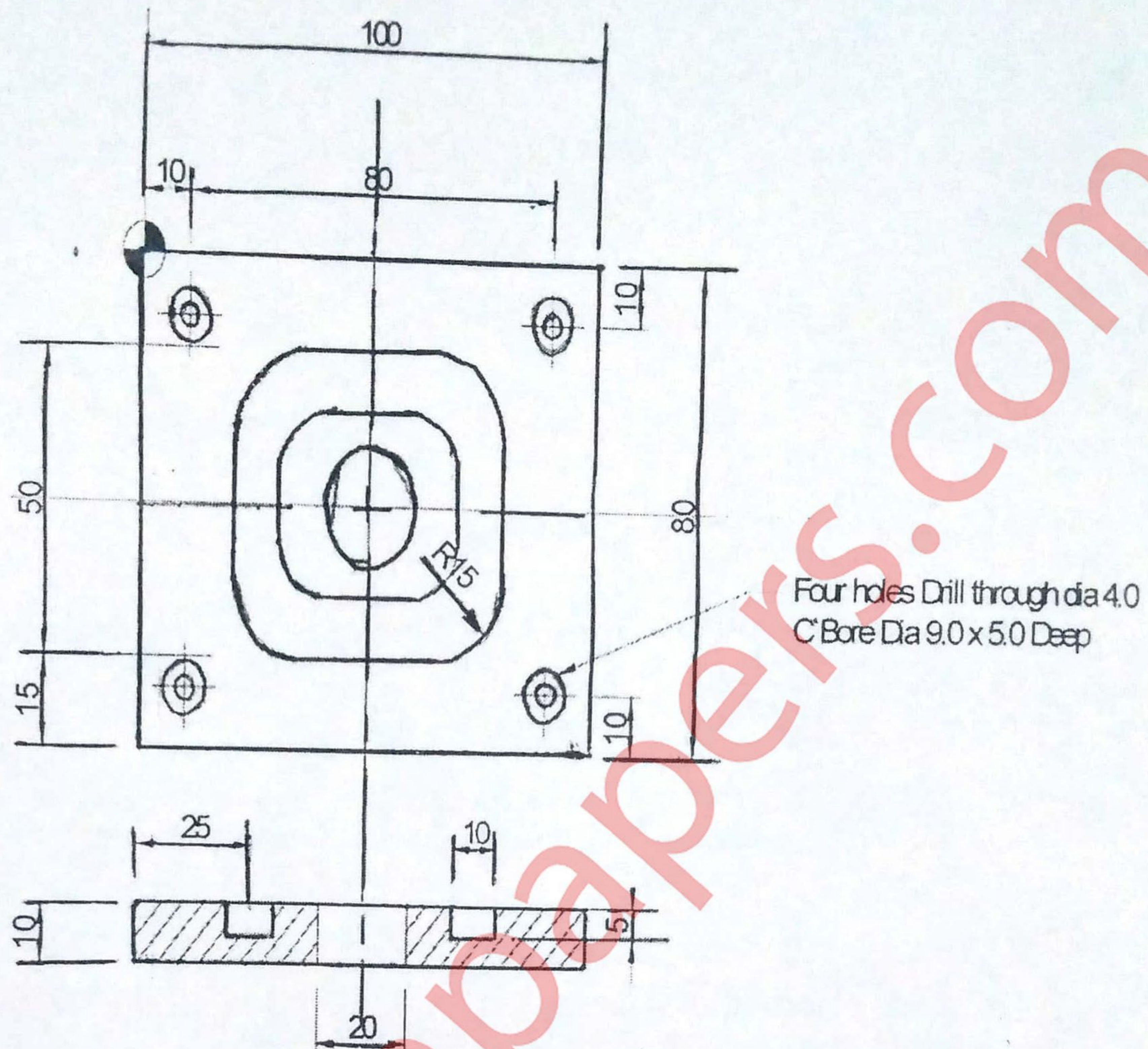
(b) Write APT part program to machine the outline of the geometry shown in figure below. **10**

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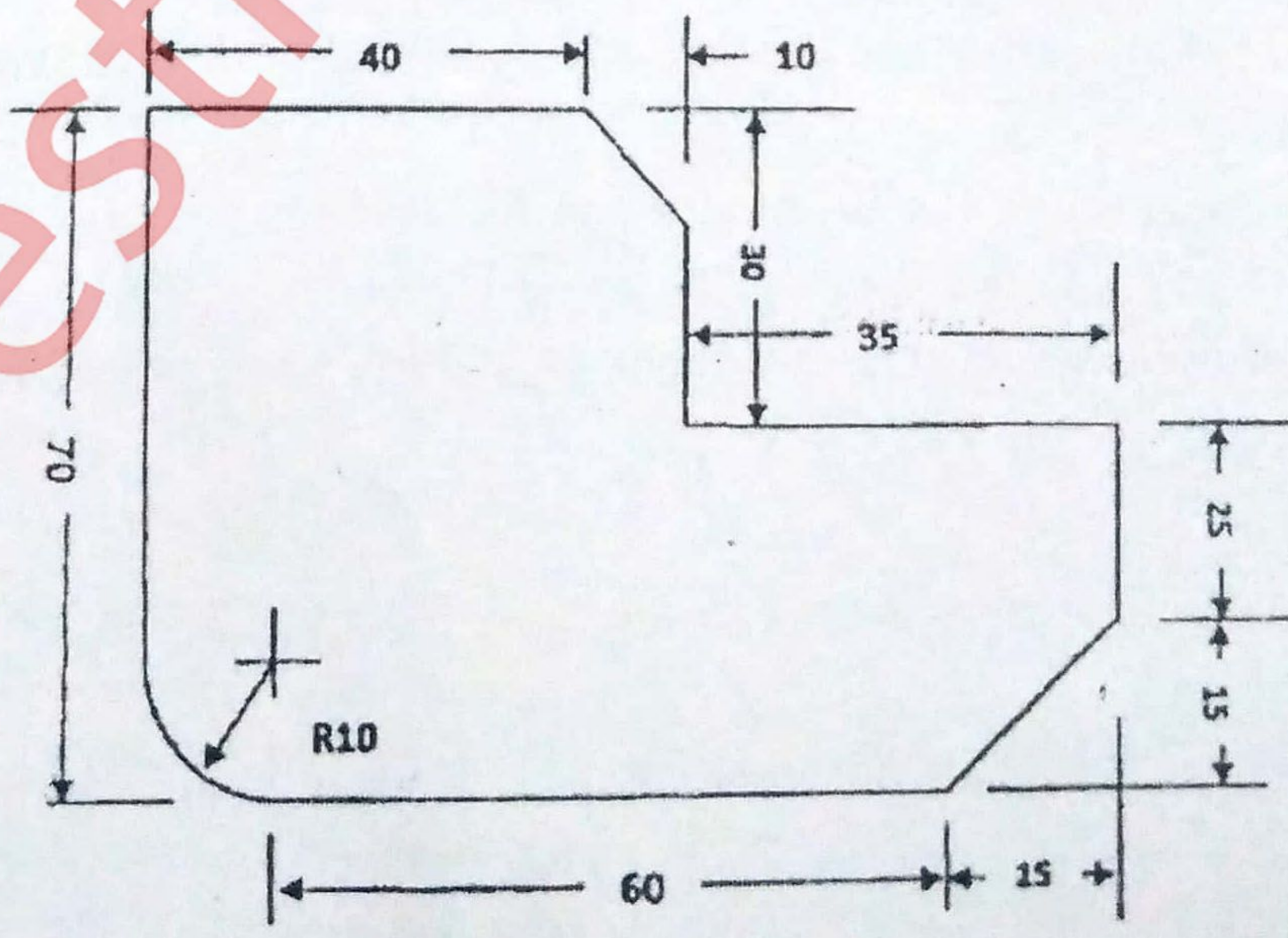
Q6. (a) Develop a part program in absolute mode to machine the part from the rolled stock. 10
Assume suitable speed, feed, and depth of cut. ~~Raw material size of number stock.~~

Raw material
Length = 260 mm
dia = 125 mm
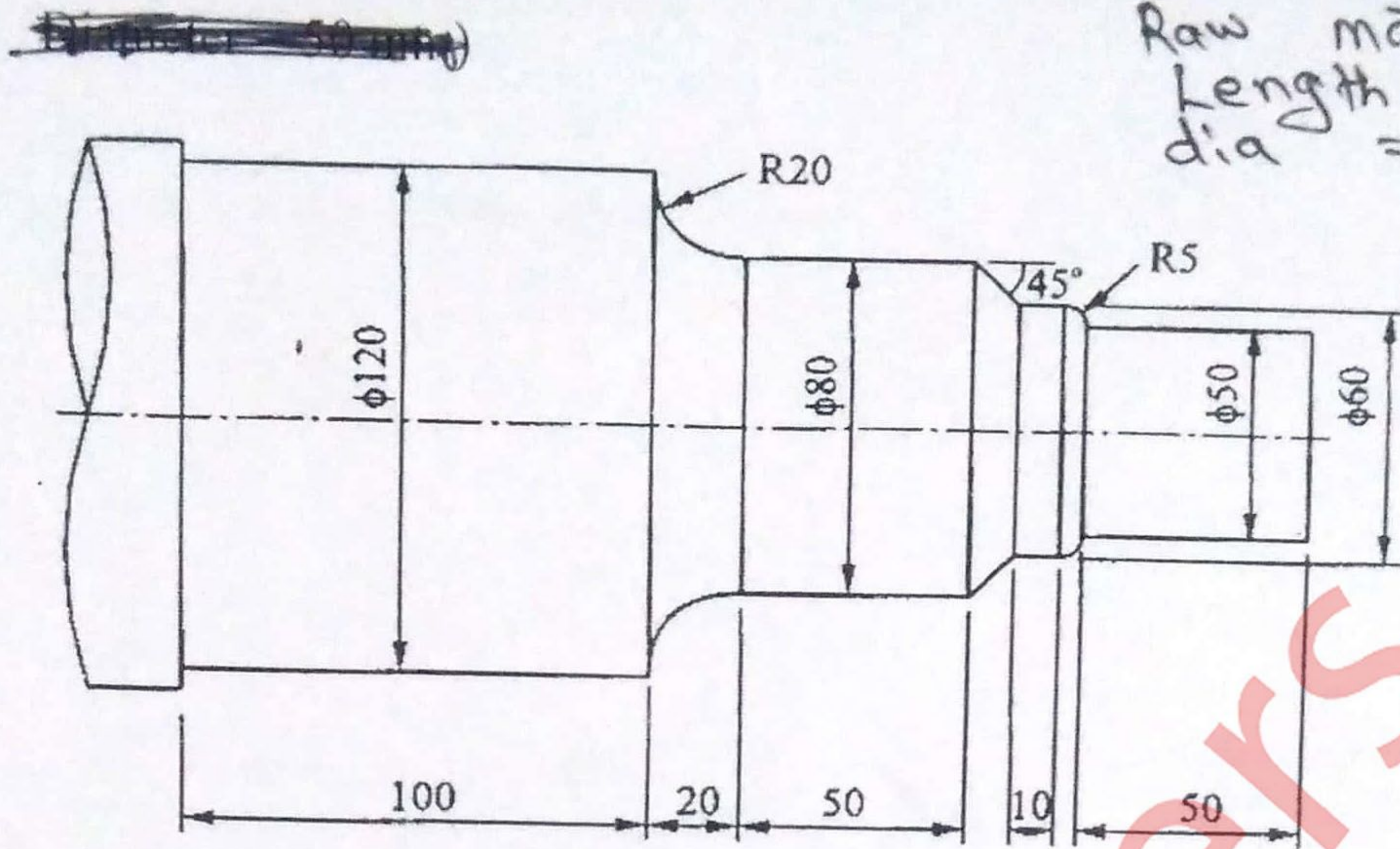
(b) Write a short note on role of CNC machine in manufacturing. 05

(c) Describe daily maintenance practices for CNC turning machine. 05

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