

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION MO/2023)

CLASS: B.TECH
BRANCH: PRODUCTION

SEMESTER : VII
SESSION : MO/2023

SUBJECT: PE402 AUTOMATION IN MANUFACTURING

TIME: 02 HOURS

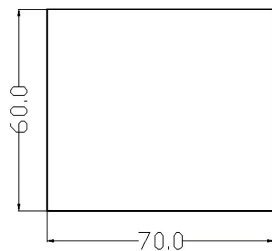
FULL MARKS: 25

INSTRUCTIONS:

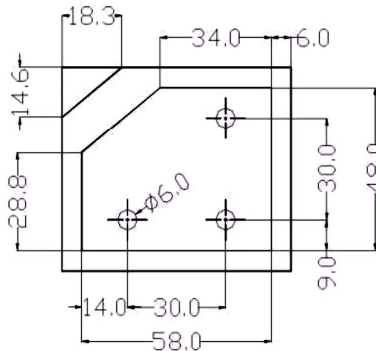
1. The question paper contains 5 questions each of 5 marks and total 25 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates
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			CO	BL
Q.1(a)	Define automation principles and strategies. Explain the Automation Migration Strategy For the Introduction of New Products.	[2]	CO1	01
Q.1(b)	Illustrate Levels of Automation. Explain the need for a Mechatronic System. Compare a conventional System and a Mechatronic System.	[3]	CO1	02
Q.2(a)	Explain the Memory effect and True Memory effect in batteries.	[2]	CO1	02
Q.2(b)	Analyze the Mechanical System Modeling in Mechatronic Systems with a suitable example.	[3]	CO1	04
Q.3(a)	Draw the CNC coordinate systems with the help of a neat diagram.	[2]	CO2	05
Q.3(b)	Write the part program for the given diagram assuming all auxiliary functions.	[3]	CO2	06

Raw Material



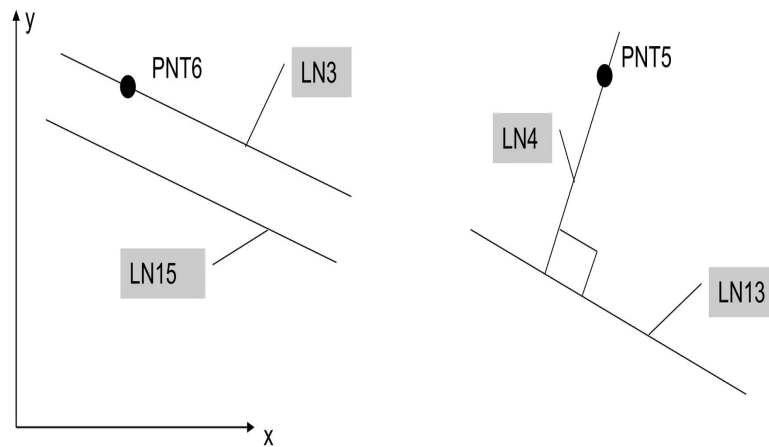
Finished Part



Q.4(a)	Explain the Distributed Numerical Control machine and compare it with a normal CNC Machine.	[2]	CO2	03
Q.4(b)	Explain; a) G81 b) G84 c) G40 d) M69 e) M16 f) G49	[3]	CO2	02

Q.5(a) Write the program for line LN3 and LN4 in APT.

[2] CO2 06



Q.5(b) Explain the Desirable Features for Selecting Measuring Devices Used in Automated Systems. Write some Common Measuring Devices Used in Automation. [3] CO3 03

.....20/09/2023 M:.....