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

CLASS: BE **SEMESTER: VI**
BRANCH: PROD. **SESSION : SP/2018**

SUBJECT : PE6007 MANUFACTURING AUTOMATION AND ROBOTICS

TIME: 1.5 HOURS **FULL MARKS: 25**

INSTRUCTIONS:
1. The total marks of the questions are 30.
2. Candidates may attempt for all 30 marks.
3. In those cases where the marks obtained exceed 25 marks, the excess will be ignored.
4. Before attempting the question paper, be sure that you have got the correct question paper.
5. The missing data, if any, may be assumed suitably.

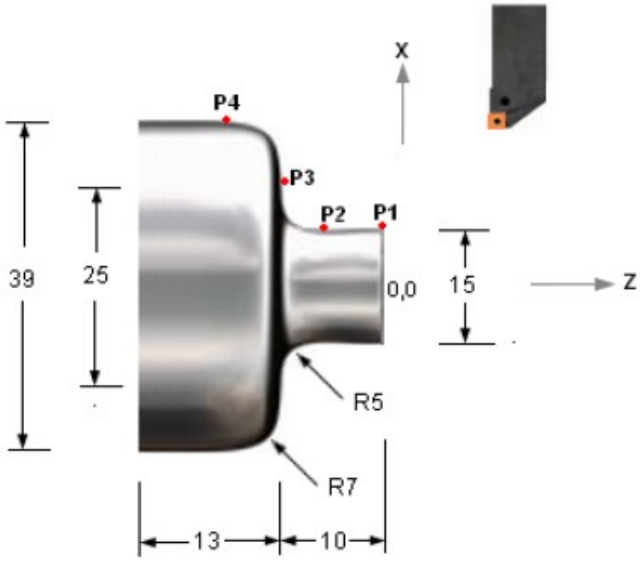
Q1. Discuss the different types of manufacturing automation. What is the relation of each type with production volume and variety? [5]

Q2. What are the basic elements of an automated systems? Discuss in short. [5]

Q3. In comparison with NC system what are the additional features added to CNC system. [5]

Q4. (a) Differentiate between point to point and continuous path control in CNC systems. [2]
(b) Discuss the MCU of a CNC system. [3]

Q5. Write a part program for machining the finished component as shown in figure on a lathe machine from a billet of diameter 39 mm and length 25 mm. The machining includes 2 mm facing operation. (Do not use any boxed cycle or subroutine) [5]



Q6. (a) What are transfer lines? [2]
(b) Differentiate between Adaptive control with optimization and Adaptive control with constraints. [3]

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