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MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

VI SEMESTER B.TECH. (AUTOMOBILE ENGINEERING)

END SEMESTER EXAMINATIONS, JUNE 2018

SUBJECT: COMPUTER INTEGRATED MANUFACTURING [AAE 4008]

REVISED CREDIT SYSTEM

(20/06/2018)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitable assumed.

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|------------|---|-----------|
| 1A. | Write the part program for the component shown in figure 1 | 05 |
| 1B. | With an example, explain how the composite part concept helps in the work cell design in group technology | 05 |
| 2A. | Write the part program for the component shown in figure 2. Consider blank diameter as 60mm and grooving tool diameter 3mm | 07 |
| 2B. | Compare open loop and closed loop control system in NC machines | 03 |
| 3A. | List and explain the different methods used in increasing the accuracy in NC Machine | 05 |
| 3B. | Explain the need of production planning. List and explain the Inputs & outputs of MRP | 05 |
| 4A. | Explain the meaning of the following with reference to robots
(i) Control resolution
(ii) Accuracy
(iii) Repeatability | 03 |
| 4B. | Write the part program for the component shown in figure 3 | 07 |
| 5A. | What is the purpose of material handling systems used in industries? List any 4 material transport equipment's | 03 |
| 5B. | Define robot. List and explain the classification of robots | 04 |
| 5C. | List and explain the different types of tool changers which are used in NC machines | 04 |

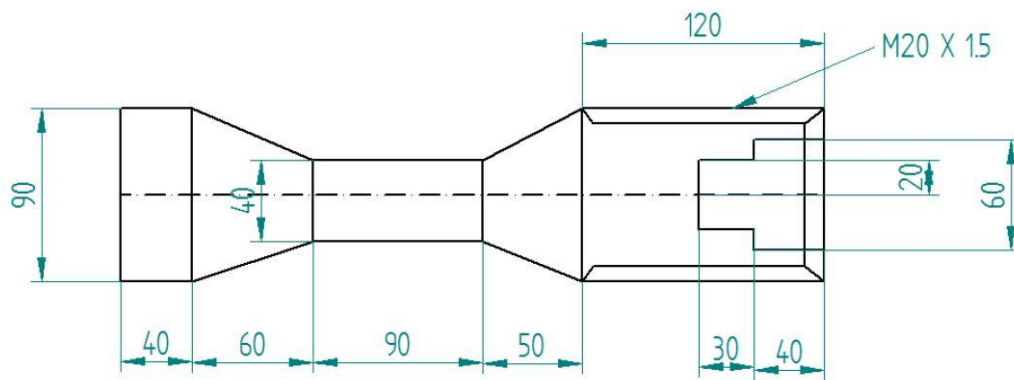


Figure 1

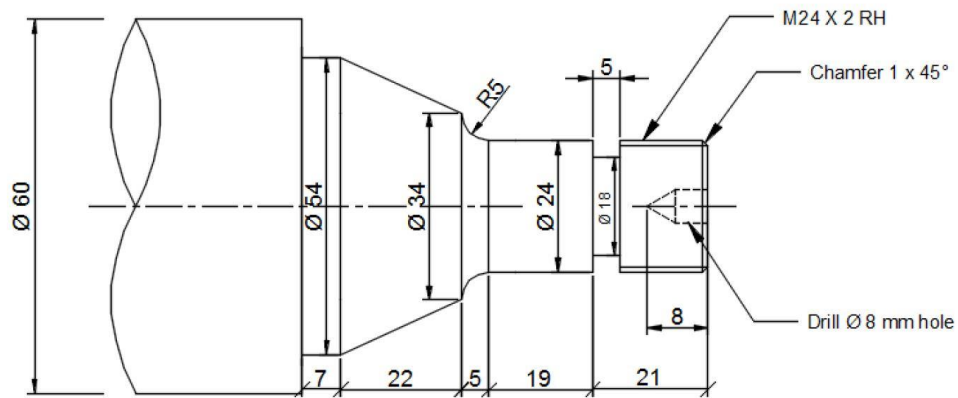


Figure 2

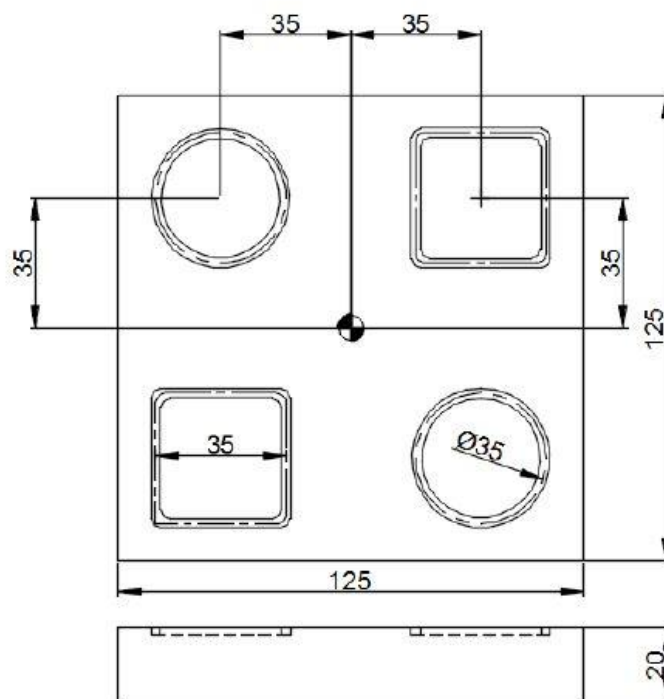


Figure 3