P-6676

[6181]-244

B.E. (Mechanical Engineering)
COMPUTER INTEGRATED MANUFACTURING
(2019 Pattern) (Semester - VIII) (402048)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) *Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.*
2) *Neat diagrams must be drawn wherever necessary.*
3) *Figures to the right indicate full marks.*
4) *Use of electronic pocket calculator is allowed.*
5) *Assume Suitable data, if necessary.*

Q1) a) Draw & Explain the components of CNC Machine Tool. **[9]**

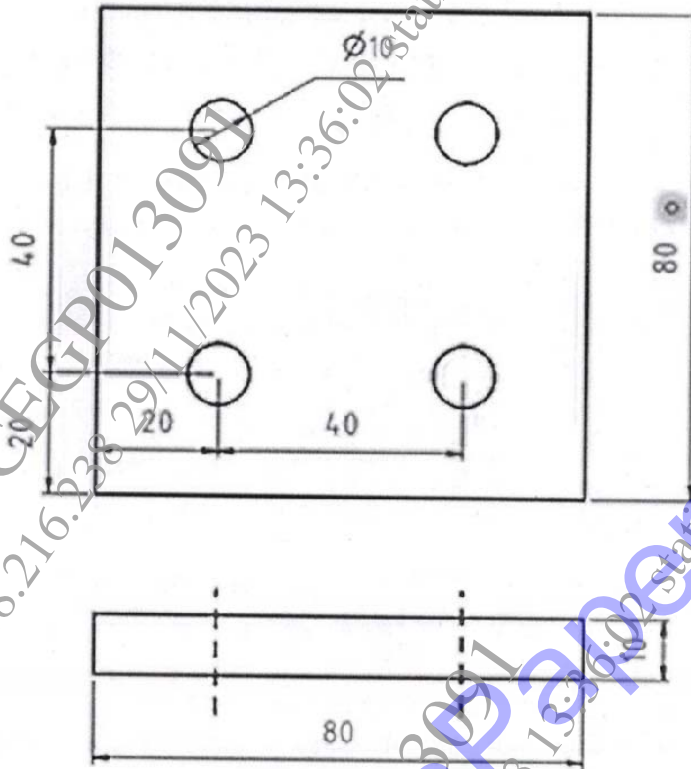b) Write a CNC turning Program for following. **[9]**
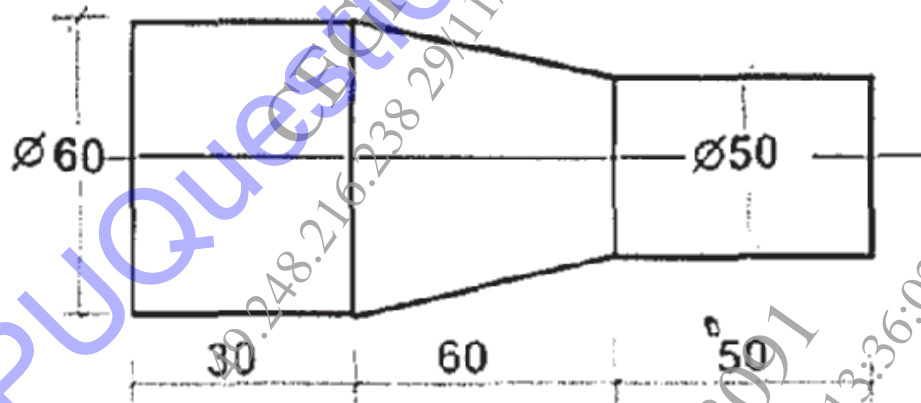
(All dimensions are in mm)
Fig. 1b

OR

Q2) a) Explain Tool length and cutter radius compensation with suitable G-codes. **[9]**

b) Write a part Program for 10 mm drilling operation at four location on milling machine on a work piece shown in Figure 2b. **[9]**

(All dimensions are in mm)
Fig. 2b

Q3) a) Describes the different approaches to Computer Aided Process Planning (CAPP). **[9]**

b) Explain in brief Capacity planning and Enterprise Resource Planning (ERP). **[8]**

OR

Q4) a) Explain Logical steps in Computer Aided Process Planning (CAPP). **[8]**

b) Describe the Manufacturing Resource Planning (MRP-II) with input, working, outputs and benefits. **[9]**

Q5) a) Explain any three Flexible Manufacturing Systems (FMS) based on layout with suitable sketches. **[9]**

b) Explain Optiz parts coding system with suitable example. **[9]**

OR

Q6) a) Describe Rank order Clustering (ROC) algorithm with suitable example. **[9]**

b) Explain cellular manufacturing and types of machine cell design with layouts. **[9]**

Q7) a) Explain the classification of components of Industry 4.0. **[9]**

b) Explain Big-Data and Cloud Computing used for IoT along with its benefits and limitations. **[8]**

OR

Q8) a) Explain the use of IoT for Smart Manufacturing, Predictive Maintenance and Supply-Chain & Logistics applications. **[9]**

b) Explain with an example, "How Digital Twin is implemented for Smart Manufacturing?" **[8]**

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