Total No. of Questions : 8]

SEAT No. :

PD4710

[Total No. of Pages : 2

[6404]-216

B.E. (Mechanical Engineering)

COMPUTER INTEGRATED MANUFACTURING

(2019 Pattern) (Semester - VIII) (402048)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Solve Q.1 or Q. 2, Q.3 or Q. 4, Q.5 or Q. 6, Q.7 or Q.8.***
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 component shown in Figure lb. Assume suitable data. **[9]**

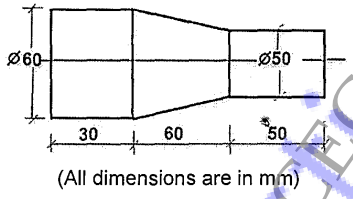

Fig. 1b

OR

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

b) Write a complete part program for 10mm drilling operation at four location on milling machine on a work piece shown in Figure 2b. Assume suitable speed and feed for machining. **[9]**

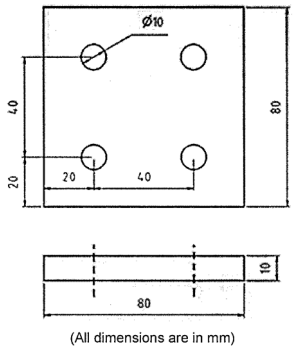

Fig. 2b

P.T.O.

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

b) Explain in brief : (i) Capacity planning, (ii) 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]**

✈ ✈ ✈