[6263]-223
B.E. (Mechanical Engineering)
Computer Integrated Manufacturing
(Semester-VIII) (2019 Pattern) (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)   Explain with neat sketch any three canned cycles with examples.   **[9]**

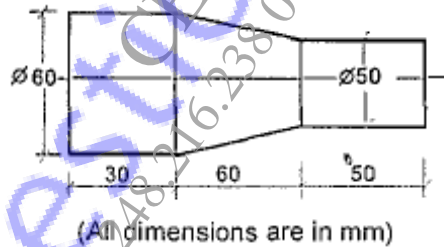   b)   Write a CNC turning program for following component shown in Figure 1b. Assume suitable data.   **[9]**

(All dimensions are in mm)

Fig. 1b

OR

Q2) a)   Explain G00, G01, G02 code in part programming with suitable example.   **[9]**

     b)   Write a complete part program for milling machine on a work piece shown in Figure 2b. Assume suitable speed and feed for machining.   **[9]**
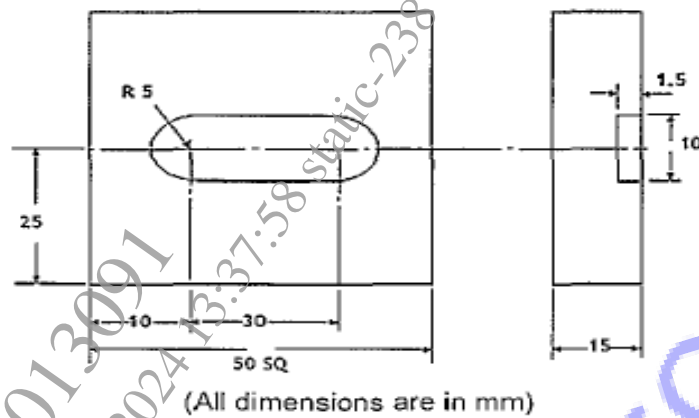
P.T.O.

R 5

25

10 30

50 SQ

1.5

10

15

(All dimensions are in mm)

Fig. 2b

Q3) a) Explain Computer Aided Process Planning (CAPP) and its Benefits. **[9]**

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

OR

Q4) a) Describes the different approaches to Computer Aided Process Planning (CAPP). **[9]**

b) Describe the Manufacturing Resource Planning (MRP-II) with input, working, outputs and benefits. **[8]**

Q5) a) Explain cellular manufacturing and types of machine cell design with layouts. **[9]**

b) Describe Rank Order Clustering (ROC) algorithm with suitable example. **[9]**

OR

Q6) a) Explain Optiz parts coding system with suitable example. **[9]**

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

Q7) a) State and explain key IoT Applications in Manufacturing. **[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]**

◀◀ ◀◀ ◀◀

[6263]-223

2