Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

A Constituent Institution of Manipal University

VII SEMESTER B.TECH. (AUTOMOBILE ENGINEERING)

END SEMESTER EXAMINATIONS, DEC 2016-JAN 2017

SUBJECT: COMPUTER INTEGRATED MANUFACTURING [AAE 453]

REVISED CREDIT SYSTEM
(04/01/2017)

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

- Answer **ANY FIVE FULL** questions.
- Draw Sketch's using PENCIL only.

1A. Write a note on conveyor type of material handling systems. **(03)**

1B. Discuss the concept of CAPP. **(03)**

1C. Sketch and explain the working of DNC machines. **(04)**

2A. Explain the threading cycle instruction format with a sample program. **(03)**

2B. List the advantages and disadvantages of stepper motor. **(03)**

2C. Sketch and explain the operational features DC servo motor. **(04)**

3A. Explain essential features of Tool magazines and discuss its types. **(03)**

3B. Explain the benefits of using Group Technology in manufacturing. **(02)**

3C. Write part program for fig.1 shown below considering cut per pass as 1mm. **(05)**

4A. Sketch & explain the working principle of Polar Body and arm robot configuration with its application. **(03)**

4B. Sketch and explain the recirculating ball screw mechanism employed in CNC machines. **(04)**

4C. Explain the different types of sensors used in robots. **(03)**

5A. Define tool path linearization & discuss its benefits. **(02)**

5B. Discuss different types of CMM configurations. **(03)**

5C. Explain the concept of FMS, discuss machine flexibility and Routing flexibility and list its merits and demerits. **(05)**

6A. Write a part program for the fig.2 shown below considering cut per pass as 1mm. **(08)**

6B. List the parts classification based on the part design attributes. **(02)**

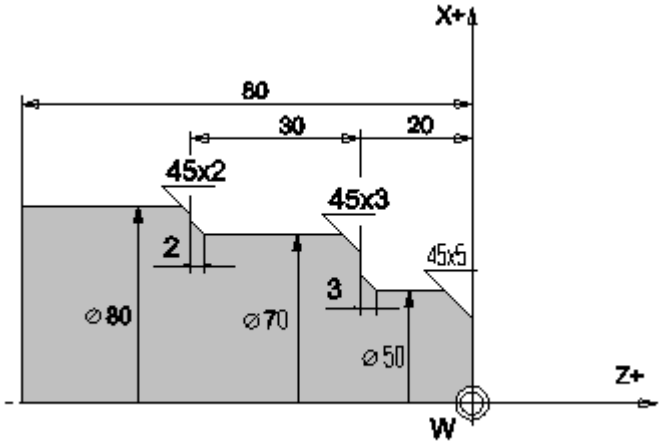
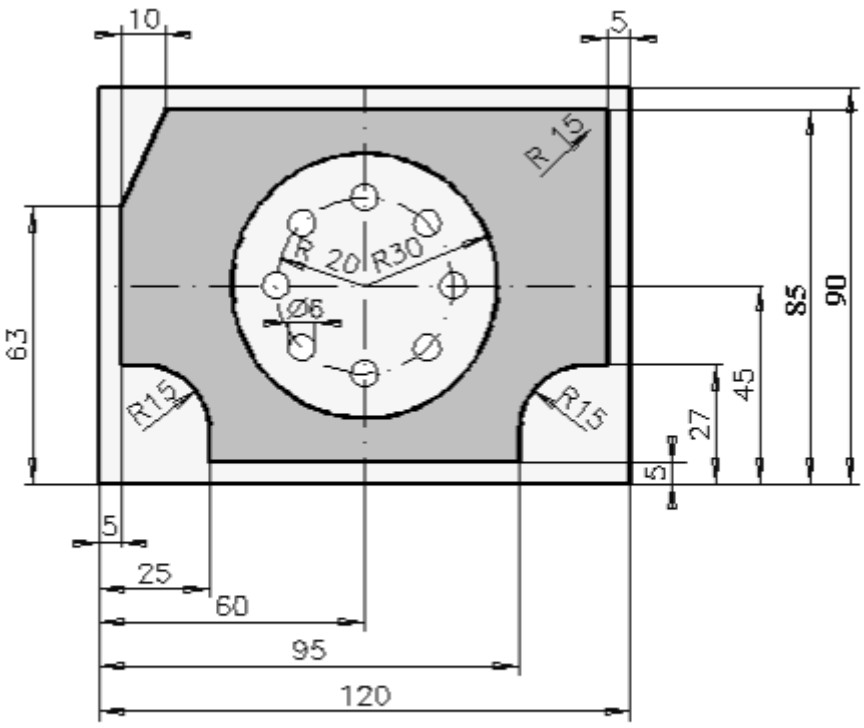


Fig.1



depth of the contour and circular pocket = 5 mm

Fig. 2