Reg. No.										

Manipal Institute of Technology, Manipal

(A Constituent Institute of Manipal University)

VI SEMESTER B.TECH INDUSTRIAL & PRODUCTION ENGINEERING

END SEMESTER EXAMINATIONS, MAY 2016

SUBJECT: **COMPUTER INTEGRATED MANUFACTURING SYSTEMS [MME 320]**

REVISED CREDIT SYSTEM

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

- Answer **ANY FIVE FULL** the questions.
- Missing data may be suitable assumed.

1A. Explain break even analysis with charts. **04**

1B. List and explain seven functions of human labour in computer integrated manufacturing system. **04**

1C. A manufacturing plant produces gas cylinders in a batch size of 70 units and requires a sequence of 9 operations in the plant. The average set up time is 3 hours and the average operation time per machine is 8 min. The average non operation time is 6hrs. How many days it will take to produce a batch, assuming that the plant operates on a 7 hours shift per day. **02**

2A. Sketch and explain computer integrated production management system. **05**

2B. Write a CNC part program for the workpiece as shown in Fig. Q 2B. Perform the pocketing by using roughing cycle and G170 code. **05**

3A. Sketch and explain retrieval type CAPP system. **05**

3B. Write a CNC part program for the workpiece as shown in Fig. Q 3B. Width of the slot is 7mm. **05**

4A. Explain MultiClass classification and coding system. List the functions of first 18 digits. **03**

4B. Explain four basic material requirement planning concepts. **03**

4C. Sketch and explain planetary roller screw. **04**

5A. Write short notes on CNC machining centre developments. **03**

5B. List and explain eight FMS workstations. **04**

5C. Write a CNC part program for the workpiece as shown in Fig. Q 5C. Drill hole of 12mm diameter and 25mm deep. Use taper turning cycle. **03**

6A. Sketch and explain the following **02*05**

a. Hydrodynamic bearings
b. PFA Analysis
c. Process layout
d. Group machine cell with manual handling
e. Bar code technology

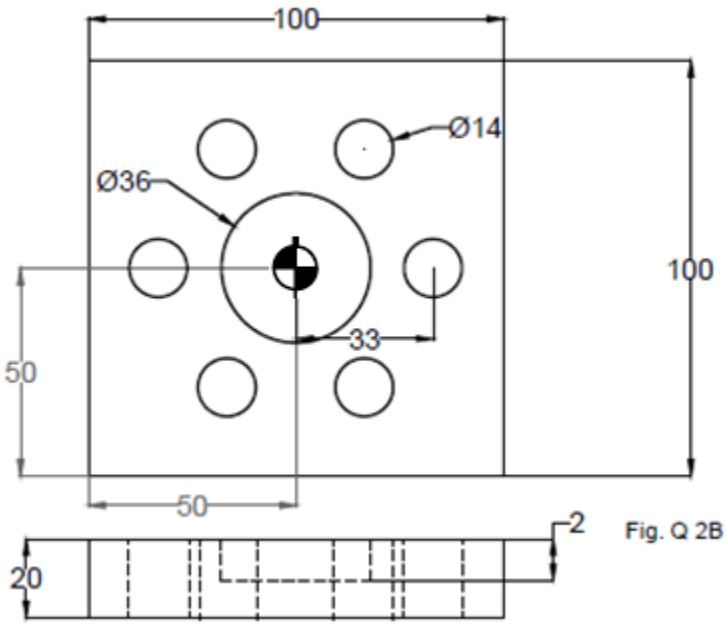

Fig. Q 2B

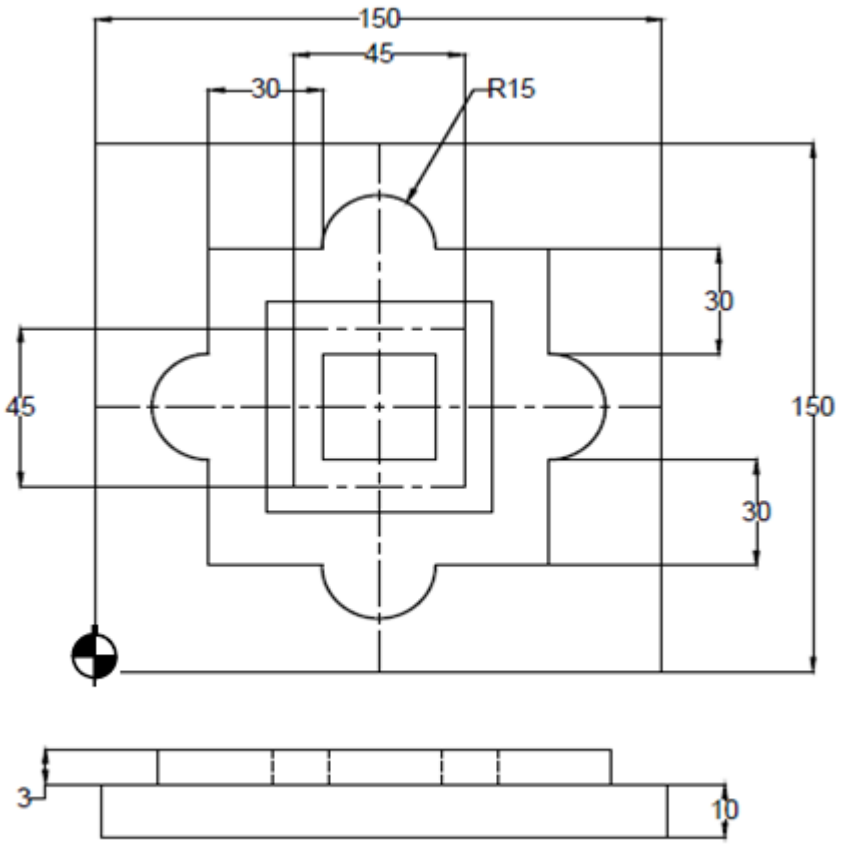

Fig. Q 3B

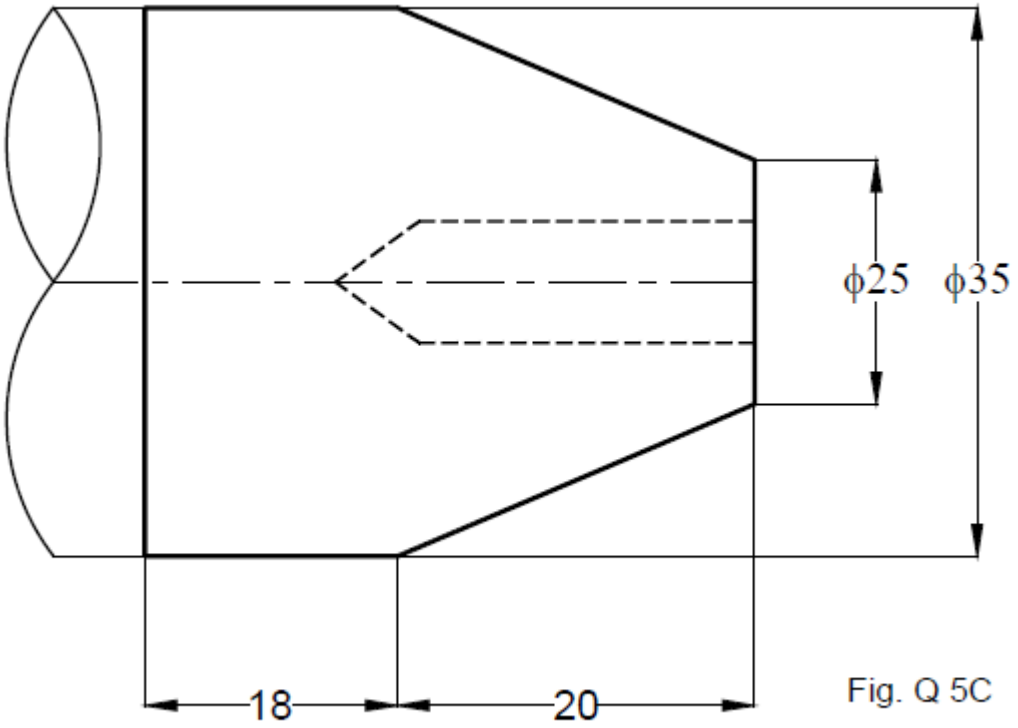

Fig. Q 5C