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B.E (Full Time) End Semester DEGREE EXAMINATION, APRIL / MAY 2011

Fourth Semester

Mechanical Engineering

ME 283 – MANUFACTURING TECHNOLOGY - II

(Regulation 2004)

Time : 3 Hours

Answer ALL Questions

Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. Why are the conditions favour for formation of discontinuous chips?
2. What are the various forms wear in single point cutting tools?
3. List the advantages of 4-Jaw chucks.
4. List three most common types of single spindle automatics.
5. Determine indexing Crank movement for milling 35 teeth on a gear blank.
6. How is a milling machine specified?
7. What are the different types of bonds used in making a grinding wheel?
8. What is meant by buffing?
9. What are the "G" codes for circular cutting in CNC programming?
10. List any important features of CNC Machine tool?

Part – B (5 x 16 = 80 marks)

11. a) i) Write a CNC part programming using ISO G and M codes. Assume suitable spindle speed and feed rate for fig.1. (8)

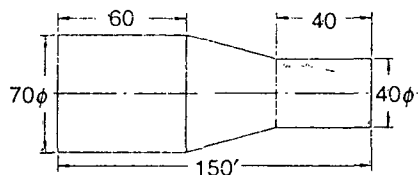


Fig.1

- ii) What is meant by computer assisted part programming? How it differ from manual part programming? (8)
12. a) i) Draw the Marchant's Circle force diagram and explain the various forces in the diagram. (8)
- ii) What is meant by tool life? How the tool life is decided by the single point cutting tool? (8)

OR

- b) i) Distinguish between orthogonal and oblique cutting based on type of operation, cutting forces and applications. (8)
- ii) Write a short notes on : (8)
- i) Coated carbide tools ii) CBN and PCBN

13. a) i) What are the types of surfaces that can be generated in centre lathe? (12)
Show how these are achieved with the help of neat sketches.
ii) What are the work holding devices are generally used in a lathe? (4)

OR

- b) Draw the tool layout for the component shown in fig.2

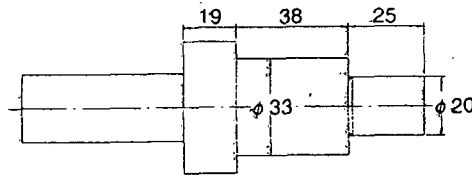


Fig. 2.

14. a) i) What are the advantages of gear hobbing process over other generating methods. (6)
ii) Describe by means of suitable sketches the process of spur gear in a gear shaper. (10)

OR

- b) i) Distinguish between boring and reaming in hole making process. (6)
ii) Explain the different steps involved in manufacturing T-slots using milling machine. (10)

15. a) i) Describe the dressing and balancing requirements in grinding. (10)
ii) What are the advantages and limitations of using centreless grinding? (6)

OR

- b) i) Distinguish between push and pull type broaching operations. (8)
ii) What is meant by continuous broaching machine? Explain with suitable sketch. (8)