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Question Paper Code : 51630

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2014.

Fourth Semester

Mechanical Engineering

ME 2252/ME 43/ME 1252 A/080120016/10122 ME 403 — MANUFACTURING
TECHNOLOGY — II

(Common to Industrial Engineering, Industrial Engineering and Management and
Mechanical and Automation Engineering)

(Regulation 2008/2010)

(Common to PTME 2252 Manufacturing Technology II for B.E. (Part-Time)
Third Semester Mechanical Engineering — Regulation 2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is orthogonal rake system?
2. Why is lubrication not required while machining cast iron?
3. What is a centre gauge that is used in threading?
4. What are programmed automatic lathes?
5. Give the functions of flutes on taps.
6. List some of the materials of broaching tools.
7. What are grinding points? Sketch the various grinding points?
8. What is a tool post grinder?
9. List the main elements of a NC machine tool.
10. What do you understand by 'canned cycle' in manual part programming?

PART B — (5 × 16 = 80 marks)

11. (a) (i) How is metal removed in metal cutting? Explain the process with simple sketch. (10)
 (ii) Explain the various methods to be applied while using the cutting fluids during machining. (6)

Or

- (b) (i) List the important characteristics of a cutting tool material. (6)
 (ii) What is the main function of cutting fluids? and its types. (10)
12. (a) (i) Explain the method of thread cutting using compound slide in a lathe. (10)
 (ii) List the type of work holding devices and tool holding devices that are generally used in a lathe. (6)

Or

- (b) (i) Explain parallel action and progressive action multispindle automatics. (12)
 (ii) Write the procedure of tool layout for automatic screw machine. (4)
13. (a) (i) Explain the hydraulic drive mechanism of a horizontal shaper with neat sketch. (10)
 (ii) What is 'deep hole drilling'? List the measures that are taken to avoid drill run off and to drill straight holes. (6)

Or

- (b) (i) Explain the indexing mechanism of a dividing head on milling machine. (12)
 (ii) Write short note on reaming operation. (4)
14. (a) (i) Discuss the various types of bonding materials generally used for making grinding wheels. (10)
 (ii) Write short notes on Abrasive belt grinding. (6)

Or

- (b) (i) Why is gear finishing required? Discuss the various types of gear finishing operations. (12)
 (ii) Write short note on super finishing. (4)
15. (a) (i) Explain the working of NC machine tool with the help of a diagram. (12)
 (ii) List the advantages of CNC systems over conventional NC systems. (4)

Or

- (b) (i) Explain the various steps to be followed while developing the CNC part Programs. (12)
 (ii) What is 'Adaptive control'? (4)