Register Number:..……

B.E. DEGREE EXAMINATIONS APRIL/May 2012

Fourth Semester

MECHATRONICS ENGINEERING

MCT104: Manufacturing Technology

Time: Three Hours **Maximum Marks: 100**

Answer ALL Questions:-

PART A (10 x 1 = 10 Marks)

1. The following allowance should be subtracted while calculating pattern allowances.

A. shake allowance B. taper allowance

C. machining allowance D. shrinkage allowance

2. The pattern material used in the shell process is

A. wood B. metal C. polystyrene D. plastic

3. Upsetting is a ___ operation.

A. drawing B. forging C. rolling D. sheet metal

4. Connecting rod of an IC engine is produced by

A. forging B. extrusion C. rolling D. machining

5. Example for multi point tool is

A. threading tool B. parting tool C. turning tool D. knurling tool

6. In turning operation, tool feed is expressed in terms of

A. gm/min B. m/mm C. mm/min D. gm/mm

7. In plain milling operation the following statement is true.

A. cutter rotates and job is held stationary B. cutter rotates and job also rotates

C. job rotates and cutter is held stationary D. cutter and job are held stationary

8. Clapper box is available in

A. milling machine B. shaping machine C. planning machine D. drilling machine

9. In tipped tools, ___ process is used to join the tool tip to the shank.

A. arc welding B. gas welding C. soldering D. brazing

10. Which of the following welding process uses non-consumable electrode?

A. resistance B. arc welding C. gas welding D. thermit welding

PART B (10 x 2 = 20 Marks)

11. Name at least four sands suitable for sand moulding.

12. What are the factors that affect the shell thickness in shell moulding process?

13. In what way three high rolling stand is advantageous than two high rolling stand?
14. Mention the defects encountered in sheet metal drawing process?
15. State two differences in performing drilling operation by using drilling machine and lathe.
16. List out the important angles of a single point cutting tool.
17. Name the mechanisms used in shaping machine and planning machine.
18. What is lapping?
19. Why flux is used in coated electrodes?
20. Give two applications each for brazing and soldering processes.

PART C (5 x 14 = 70 Marks)

21. a) (i) Why pattern allowances are used ? Detail pattern allowances with the help of a suitable sketch. (10)

(ii) List out any ten casting defects. (4)

(OR)

b) How melting of metal is carried out in foundries? With neat sketch, explain the preparation of Cast Iron.

22. a) What are the principal methods of hot working? Explain the construction and working of any two methods.

(OR)

b) (i) State the differences between hot and cold working process. (8)

(ii) List out sheet metal operations and compare the features of any two operations. (6)

23. a) Draw the simple sketch of a centre lathe and write the descriptions of each part.

(OR)

b) (i) Name the tool used for producing internal thread. Sketch the tool and write on how threading is carried out using this tool. (8)

(ii) What is machining time? At what speed a 12 mm drill will run for cutting steel at 20 m/min surface speed? (6)

24. a) (i) Write on two basic types of milling. (6)

(ii) How abrasives are classified? Explain any two types of abrasives. (8)

(OR)

b) Why gears are require? Explain the process of generating gears using gear hobbing method.

25. a) List out the tools used in arc welding process. Also explain the working of an arc welding process and mention four applications of the process.

(OR)

b) Enumerate the different methods of welding using resistance welding process stating the merits and limitations of the process.

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