Register Number.....

M.E. DEGREE EXAMINATIONS: OCTOBER / NOVEMBER - 2008

Third Semester

CAD/CAM

P07CCE08: Flexible Competitive Manufacturing System

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

Answer ALL Questions

PART – A (20×1 = 20 Marks)

1. Material to be moved should be aggregated into a larger unit size and the unit size should be the same for all machines in material handling system is

a) System Principle
b) Mechanization Principle
c) Unit load Principle
d) Gravity Principle

2. The measure of robot's ability to position its end-of-wrist at previously taught point in work volume is

a) Repeatability
b) Control resolution
c) Accuracy
d) Spatial resolution

3. A device, which does the general population associate most with automation is

a) flexible manufacturing
b) robots
c) computer graphics workstation
d) numerical control machine

4. In a point-to-point type of NC system

a) Control of position and velocity of the tool is essential
b) Control of only position of the tool is sufficient
c) Control of only velocity of the tool is sufficient
d) Neither position nor velocity need be controlled

5. A method for identifying part families and associated grouping of machine tools is called

a) cellular manufacturing
b) Machine cell design
c) Production Flow Analysis
d) flexible manufacturing system

6. Looking at either the physical parts or their photograph and arranging them into similar groupings is _____ method

a) Visual inspection
b) Part classification
c) Coding
d) Product design

7. Which of the following is not a method of grouping parts into part family?

a) Visual inspection
b) Classification and coding
c) Production Flow Analysis
d) Material Handling

8. Group technology brings together and organizes

a) Parts and simulation analysis
b) Documentation and analysis
c) Automation and tool production
d) Common parts, problems, and tasks

9. FMS relies on the principle of

a) Group technology
b) Just in time
c) Processing operation
d) Assembly operation

10. Capability to adapt a given machine / workstation in the system to a wide range of production operations and part styles is called _____

a) Production flexibility
b) Product flexibility
c) Volume flexibility
d) Machine flexibility

11. Dedicated FMS is _____

a) Less flexible but more capable of higher production rates
b) More flexible but at the price of lower production rate
c) Less flexible at the price of moderate production rate
d) More flexible and capable of higher production rates

12. The management of the primary material handling system that moves work parts between stations is known as _____

a) Production control
b) Traffic control
c) Shuttle control
d) Tool control

13. Flexible manufacturing allows for

a) factory management
b) automated design
c) tool design
d) quick and inexpensive product change

14. Which of the following items best describes a CAM technology?

a) Drafting
b) Numerical control
c) Documentation
d) Geometric modeling

15. The technique, which enables the designer to mould and shape, rather than construct an object using a series of lines is

a) Solid modeling
b) Surface modeling
c) Wire-frame modeling
d) FEM (Finite Element Modeling)

16. "Snap" command feature in both Auto CAD and Versa CAD ensures that

a) template lines can be removed
b) objects are entered at specific intervals
c) definable centre markers are entered
d) identified data are automatically segmented

17. The concept to move materials in a controlled environment driven by the usage of parts is called

a) Kanban system
b) Flexible manufacturing system
c) Line balancing
d) Lean technology

18. Pull system approach to manufacturing execution is an ingredient of

a) FMS (Flexible Manufacturing System)
b) ERP (Enterprise Resource Planning)
c) JIT (Just In Time)
d) MRP (Material Resource Planning)

19. Lean Manufacturing is a method of

a) Cost reduction and increase in turnover by eliminating non value added activities
b) Cost reduction only
c) Increase turnover only
d) Cost reduction and increase in turnover without eliminating non value added activities

20. A proven management innovation assuming importance for achieving industrial Excellence is nothing but

a) Lean manufacturing
b) Flexible manufacturing
c) JIT (Just-In-Time)
d) Agile manufacturing

PART – B (5×16 = 80 Marks)

21a) (i) Discuss the various interpolation schemes developed to deal the problems with a Contouring type NC system (10)

(ii) Enumerate the types of material handling equipment used in automated environment (6)

(OR)

b) (i)What is robot? Discuss the various types of sensors used in industrial robots. (10)

(ii) Explain the design for assembly concept (6)

22 a) (i) What are the three general methods for grouping parts into families in GT? Explain them briefly. (12)

(ii) What basis the part families are formed in GT? (4)

(OR)

22. b) (i) Discuss about the cellular manufacturing designs (8

(ii) Illustrate OPTIZ system of parts classification and coding structure neatly (8

23. a) Discuss the components of FMS and FMS workstations in detail. (1

(OR)

b) (i) Discuss about the function of computer control in FMS (1

(ii) List out the benefits and application of FMS.

24. a) Discuss any four computer system application software giving the salient features and limitations of each one. (4×4=1

(OR)

b) Explain how the integration of CAD / CAM improves the product life cycle in industrial scenario. (

25. a) Thrash out the objectives of JIT and its influence in modern manufacturing method (1

(OR)

b) (i) Give details of Kanban system. What are its strategic implications? (

(ii) Write a brief note on lean manufacture concept and how for it is beneficial in modern manufacturing industry

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