



**B.E DEGREE EXAMINATIONS: MAY 2015**

(Regulation 2009)

Sixth Semester

**MECHATRONICS ENGINEERING**

MCT141: Plant Layout and Material Handling

**Time: Three Hours**

**Maximum Marks: 100**

**Answer all the Questions:-**

**PART A (10 x 1 = 10 Marks)**

1. \_\_\_\_\_ is not the disadvantage of selecting urban area for factory location
  - a) High cost of land
  - b) No good communication
  - c) Labor cost is high
  - d) Municipal restriction on buildings
2. Which is not a part of manpower planning process
  - a) Assess personnel supply
  - b) Demand for personnel
  - c) Material Plan
  - d) Training plans
3. The main objective of plant layout is to \_\_\_\_\_
  - a) Increase material handling equipments
  - b) Maintain minimum turnover in process inventory
  - c) Effectively utilize the labors
  - d) Decrease the comfort zones for employee
4. \_\_\_\_\_ the main advantage of string diagram over flow diagram.
  - a) Development time is less
  - b) Identify repetitive movements between workstations
  - c) Need less experience
  - d) Easy to develop
5. The main purpose of Ventilation is to \_\_\_\_\_
  - a) Increase safety
  - b) To get fumes and dust
  - c) Improve CO<sub>2</sub> concentration
  - d) Control the humidity and temperature
6. \_\_\_\_\_ is not a important aspect in selecting lighting systems
  - a) Fully automated lighting
  - b) Sufficient brightness
  - c) Uniform Illumination
  - d) Contrast between object and background
7. \_\_\_\_\_ is not an element of material handling system
  - a) Motion
  - b) Structure
  - c) Time
  - d) Quantity



22. a) (i) Discuss the functions of layout planning (5)  
(ii) Draw and explain the operation of process chart and flow diagram for an assembly unit. (9)

**(OR)**

- b) (i) Why do we need plant layout? What are the types of plant layout? (7)  
(ii) Explain how string diagram is constructed. (7)

23. a) (i) Explain how maintenance is important for factory. (6)  
(ii) State the importance of packaging. Sketch the layout for packaging machinery. (8)

**(OR)**

- b) (i) Does the lighting have any role in production rate? (4)  
(ii) Explain the importance of nature characteristics of lighting with some advantages (10)

24. a) (i) What are the factors to be considered in selecting conveyors in industries? (7)  
Explain any two conveyors with a neat sketch  
(ii) Write in detail about the concept of containerization and palletization. (7)

**(OR)**

- b) (i) Explain the importance of material handling system in detail (10)  
(ii) What are the advantages of material handling system? (4)

25. a) (i) What are the factors involved in designing of material handling systems? (7)  
(ii) Summarize the functions of equipment cost analysis. (7)

**(OR)**

- b) Define safety analysis. List out the steps in safety analysis with respect to material handling.

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