



B.E DEGREE EXAMINATIONS : APRIL/ MAY 2016

(Regulation 2013)

Sixth Semester

MECHATRONICS ENGINEERING

U13MCE102 : Plant Layout and Material Handling

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Economy in material handling can be achieved by
 - a) employing gravity feed movements
 - b) minimizing distance of travel
 - c) by carrying material to destination
 - d) all of the above without using manual labour
2. For good natural ventilation, the ____ type of building preferred
3. Principle of 'Unit load' states that
 - a) materials should be moved in lots
 - b) one unit should be moved at a time
 - c) both 'a' and 'b'
 - d) none of the above
4. Material handling consists of movement of material from_____
5. The following type of layout is preferred for low volume production of non standard products
 - a) Product layout
 - b) Process layout
 - c) Fixed position layout
 - d) Combination layout
6. Fork lift truck is used for_____
7. This chart is a graphic representation of all the production activities occurring on the shop floor
 - a) Operation process chart
 - b) Flow process chart
 - c) Templates
 - d) All of the above
8. Over bridge crane has_____.
9. Special purpose material handling equipments are used in
 - a) Process layout
 - b) Line layout
 - c) both 'a' and 'b'
 - d) None of the above
10. Safety in industry helps to _____.

PART B (10 x 2 = 20 Marks)
(Answer not more than 40 words)

11. List the various costs decided the location economy.
12. Distinguish between rural and urban plant sites.
13. Write the advantages of fixed position layout.
14. Outline the concept of process layout.
15. List the types of factory building.
16. Discuss the importance of packaging.
17. Recognize the criteria for equipment selection.
18. List the equipments used for material handling systems.
19. Write the purpose of the Man-Machine chart.
20. Define unit load design.

PART C (5 x 14 = 70 Marks)
(Answer not more than 400 words)

Q.No. 21 is Compulsory

21. Explain in detail about the various factors affecting the plant location.

22. (a) Write short notes on
 - (i) Fixed position layout (7)
 - (ii) Work station design (7)
- (OR)**
- (b) Explain in detail about the procedure for layout planning.

23. (a) Explain the importance of packaging and also about the layout for packaging.
- (OR)**
- (b) Discuss in detail the types of building construction with an example.

24. (a) Explain in detail the importance and scope of material handling systems.
- (OR)**
- (b) Write short notes on
 - (i) Concept of containerization. (7)
 - (ii) Concept of Palletization. (7)

25. (a) Explain the various factors to be considered in the design of material handling systems.
- (OR)**
- (b) Explain the different levels of analysis for Material handling systems.
