



# ACE

## Engineering College

Ankushapur(V), Ghatkesar(M), Medchal .Dist - 501 301

### DEPARTMENT OF MECHANICAL ENGINEERING

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Branch: Mechanical

Year IV B.Tech

Section: A&B

Name of Faculty: M.Sandeep / V.Shalini

Subject: Plant Layout and Material Handling

1. What is plant layout? Enlist the differences between fixed layout and fixed position layout
2. Enumerate various horizontal type layouts.
3. Distinguish between product layout and process layout and give any four features.
4. Explain Apples plant layout procedure.
5. State the objectives of a good plant layout
6. State and explain systematic layout planning approach briefly with a flowchart.
7. What is process layout? Explain its salient features and state its advantages and disadvantages.
8. Explain systematic layout design procedure for scooter manufacturing.
9. What problem can be envisaged in case layout is not appropriate?
10. Compare design principle of process layout with product layout.
11. What is the objective of plant layout?
12. Explain the factors influencing plant layout.
13. What do you understand by line balancing?
14. What are the symptoms of poor plant layout?
15. What are the symptoms of an unbalanced line?
16. Explain the use of break even analysis for plant location with a suitable example.
17. Explain the Travel Charting Method.
18. Classify the different Layouts.

19. What are the steps to be followed in designing a Layout? Classify the different evaluating techniques.
20. Define Layout and discuss its importance in plant operations.
21. Write the advantages of CRAFT.
22. Define quadratic approach method
23. What is CORELAP/Write the procedural steps of CORELAP for layout design?
24. Explain briefly placement and contiguity rules?
25. State the heuristic of ALDEP?
26. Explain the procedure involved in CORELAP for improving the layout?
27. Write about construction of REL chart?
28. Describe fixed position layout with schematic diagram and disadvantages and advantages?
29. Explain the branch and bound method algorithm.
30. Write down the step-by-step procedure ALDEP.
31. Number of department 7 solve by using ALDEP method areas of department?

DEPARTMENT	FUNCTION	AREA(Sqmetres)
1	Receiving	12000
2	Milling	8000
3	Press	6000
4	Screw Machine	12000
5	Assembly	8000
6	Painting	12000
7	Shipping	12000
TOTAL		70000

32. What do you mean by the term plant location?
33. What are the various factors which affect plant location?
34. What are the factors to be considered to obtain good working conditions in a plant?
35. Evaluate an optimum layout by using "CRAFT" algorithm for the following data.

Total number of departments=5

Total number of Interchangeable Departments=5

4    2    4

1	5	4	4
2	3		4

4        6

36. With the help of CORELAP algorithm suggest a best layout for the following data

Number of departments=7

Areas of Departments

Department	Area(Sq-m)
1	12,000
2	8,000
3	6,000
4	12,000
5	8,000
6	12,000
7	12,000
Total	70,000

REL-Chart

1	---
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2	E	---					
3	O	U	---				
4	I	E	U	---			
5	O	I	U	I	---		
6	U	I	O	U	A	---	
7	U	U	U	U	I	E	---
	1	2	3	4	5	6	7

Closeness values,

A=6, E=5, I=4, O=3, U=2, X=1

37. What do you mean by Group technology layout?
38. What are the objectives of Group technology layout and Stepwise procedure for processing?
39. Write in detail about fixed position layout. Under What circumstances this layout is suitable.
40. What are the methods employed for group technology layout?
41. Write about the role of efficient Material Handling systems in the productivity.
42. State the advantages and disadvantages of MH?
43. Classify MH equipment based on by their design features and working area and explain each of them.
44. State any four MH principles?
45. Define material handling .Explain the importance of material handling.
46. What are the objectives of material handling?
47. Classify and explain various models of MH equipment based on variable path with neat sketches.
48. Explain the terms

i Unit load

ii logistics

iii packaged material

49. Why Material characteristics are required for design g of Material Handling Equipment?

50. What type of Material Handling Equipment required in fixed position layout?