

R15

Code No: 128DT

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year II Semester Examinations, July - 2019

PLANT LAYOUT AND MATERIAL HANDLING

(Mechanical Engineering)

Time: 3 hours

Max. Marks: 75

Note: This question paper contains two parts A and B. Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

(25 Marks)

1. a) List out classification of layouts. [2]
- b) What are the elements of plant layout? [3]
- c) Write the specifications of any process layout. [2]
- d) What are the factors are to be considered for product layout? [3]
- e) What is meant by a Heuristics? [2]
- f) How the heuristics helpful while designing a plant layout? [3]
- g) What are the benefits of ALDEP? [2]
- h) Differentiate Material handling system and material handling equipment. [3]
- i) How do you minimize the material equipment cost? [2]
- j) What are the safety precautions to be taken in the Material handling system? [3]

PART - B

(50 Marks)

2. Write types of layout and selection procedure of layout for cement industry. [10]
- OR**
3. Write your ideas and expectations on problems related maintenance management in process industries. [10]
 4. Develop a layout for the following problem, area of departments and scale are shown in table using CORELAP. [10]

Department	Area (Sq.ft)	No. of Squares
1	1200	2
2	800	1
3	600	1
4	1200	2
5	800	1
6	1200	2
7	1200	2

OR

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5. Explain the essentials of good layout and factors which are needed to be considered while adopting a particular type of layout. [10]

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6. What types of powered trucks are self loaders? Give their operating details with neat sketches. [10]

OR

7. What is the basis of selecting a production system such as Batch production, Mass production or Flexible manufacturing system? Explain all factors to be considered. [10]

8.a) "Effective material handling control system should always focus on critical path in the plant" comment.

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b) Describe in brief equipment replacement problems in manufacturing plant. [5+5]

OR

9. At a manufacturing organization, machineries are arranged on process layout basis. It is proposed to change existing layout to product layout. Prepare a brief management report listing circumstances and advantages of such change over. [10]

10. a) Explain safety and energy conservation in material handling equipment.

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b) Discuss the application of computer in optimum plant layout. [5+5]

OR

11. Explain the need of training in material handling equipment maintenance management. [10]

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