Code No: 118DT

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year II Semester Examinations, May - 2017

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) Distinguish between 'Product layout' and 'process layout' and give any four features. [2]

b) Explain Apple's plant layout procedure. [3]

c) Explain briefly placement and contiguity rules [2]

d) State the heuristic of ALDEP. [3]

e) How are the belt conveyors classified? [2]

f) State any four material handling principles. [3]

g) How are the cranes classified? [2]

h) Draw a neat sketch of jib crane. [3]

i) State the various cost factors involved in material handling [2]

j) State the various aspects of maintenance of Hoists. [3]

PART - B

(50 Marks)

2.a) State the objectives of a good plant layout.

b) State and explain systematic layout planning approach briefly with a flowchart.[5+5]

OR

3. What is process layout? Explain its salient features and state its advantages and Disadvantages. [10]

4. Explain the procedure involved in CORELAP for improving the layout. [10]

OR

5.a) Write about construction of REL chart

b) State the mathematical formulation for Quadratic Assignment problem. [5+5]

6.a) State the advantages and disadvantages of material handling.

b) Explain the terms i) Unit load ii) Packaged material iii) Logistics [4+6]

OR

7. Classify material handling equipment based on by their design features and working area and explain each of them. [10]

8. State and explain factors to be considered for the selection of material handling equipment. [10]

OR

9. What is a crane? Classify cranes and write about at least two types of cranes in detail. [10]

10. State and explain procedure involved in maintenance involved in Lift. [10]

OR

11 State and explain salient features of Escalators with a neat sketch. [10]

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