

Code No.: ME861PE

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**CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS**

**IV-B.TECH-II-Semester End Examinations (Regular) – April - 2024
PLANT LAYOUT & MATERIAL HANDLING
(MECH)**

[Time: 3 Hours]

[Max. Marks: 70]

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 20 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

(20 Marks)

1. a) Define Layout. [2M]
- b) Write two advantages of Fixed Layout. [2M]
- c) Define sweep pattern. [2M]
- d) List out features of ALDEP. [2M]
- e) Name the principle behind gravity principle? [2M]
- f) What is a unit load? [2M]
- g) What is the capacity of non powered conveyors.? [2M]
- h) Chain conveyors are used in which industries give three examples? [2M]
- i) How do you minimize the material equipment cost? [2M]
- j) Define operating cost. [2M]

PART-B

(50 Marks)

2. Compare the differences between Process and Product Layout. [10M]
- OR**
3. Identify the factors influencing the selection of a location for Layout. [10M]
 4. Explain the about the heuristic procedure for CORELAP. [10M]
- OR**
- 5.a) Illustrate Quadratic assignment model with a suitable example. [5M]
 - b) Write a few advantages of Quadratic assignment problem? [5M]
 6. Explain the major principles of Material Handling System. [10M]
- OR**
7. Briefly explain the principles related to the equipment design. [10M]
 - 8.a) In which situation conveyors are preferred ?why? [5M]
 - b) Suggest which kind of conveyors system is suitable for automobile assembly units? [5M]
- OR**
9. What types of powered trucks are best suited to the movement of long length items such as pipe, bar stock or lumbers? [10M]
 10. Explain various safety measures during the maintenance for mechanical and chemical industries. [10M]
- OR**
- 11.a) List out elements of a material handling ergonomics program. [5M]
 - b) List out methods to minimize cost of material handling. [5M]
