U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

February / March 2023 Semester End Main Examinations

Programme: B.E. **Semester: V**
Branch: Industrial Engineering and Management **Duration: 3 hrs.**
Course Code: 22IM5DCFPD **Max Marks: 100**
Course: Facility Planning and Design **Date: 03.03.2023**

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

UNIT - I

1	a)	Define plant layout and briefly explain the factors that influence plant location.	**10**
	b)	Define Material Handling. List the principles and objectives of Material Handling.	**10**

OR

2	a)	Define Plant layout. Explain the following layouts with a neat sketch: - i. Plant Layout ii. Process Layout iii. Fixed Position Layout	**10**
	b)	Explain how the material handling equipment's are classified. Give example.	**10**

UNIT - II

3	a)	List the factors to be considered for space planning.	**10**
	b)	List the steps involved in Reed's plant layout procedure.	**10**

OR

4	a)	List the steps involved in James Apple plant layout procedure.	**10**
	b)	Write a brief note on the following: - i. Activity Relationship chart ii. Space Relationship chart	**10**

UNIT - III

5	a)	Explain the classification of layout algorithms.	**10**
	b)	Briefly explain Simulated Annealing and Genetic Algorithm in Layout design.	**10**

UNIT - IV

6	a)	There are five existing plants which have a material movement relationship with the new plant. The existing plant's locations of (400, 200), (800, 500), (1100, 800), (200, 900), (1300, 300). Furthermore, the tonnage of materials transported from the new plant to the various location of the new plant such that the distance moved is minimised.	**10**
	b)	Develop a mathematical model for warehouse system.	**10**

UNIT - V

7	a)	Write a note on MCDM for decision making process in FPD.	**10**
	b)	Explain MADM approaches in decision process in FPD,	**10**

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