

Register No : _____

THE KAVERY ENGINEERING COLLEGE

(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV /DEC 2024

Sixth Semester

Mechanical Engineering

CME355 – Material Handling and Solid Processing Equipment

Regulations - 2021

Duration : 3 Hrs

Maximum : 100 Marks

PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	Define material handling.	RE	1	2
2.	Explain the concept of unit load.	UN	1	2
3.	Differentiate between the hand and power trucks.	AN	2	2
4.	Give any two specifications of FLT.	RE	2	2
5.	Give examples of any two industries that utilize the metallic conveyors.	RE	3	2
6.	Give any two materials used for belt cover.	RE	3	2
7.	Name the types of chains used in hoisting equipment.	RE	4	2
8.	What are the types of bucket elevators?	RE	4	2
9.	What are the operational areas that involve the bulk handling of materials?	RE	5	2
10.	Differentiate a serial manipulator and a parallel manipulator in robotics.	AN	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*13 = 65)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a i What are the key requirements of an effective material handling system?	RE	1	7
	ii What is the functional scope of material handling within an industrial setting?	RE	1	6
	Or			
	b What are the major advantages of unitization and handling of unit loads?	RE	1	13
12.	a Briefly explain the different types of hand trucks.	UN	2	13
	Or			
	b With the help of a line sketch explain the features of a forklift truck.	UN	2	13
13.	a Discuss the applications and features of two types of conveyors.	AP	3	13
	Or			
	b Identify and explain a system to move large and heavy materials like concrete blocks.	AP	3	13

14.	a	Discuss two weighing equipment types for measuring bulk material transport to enhance operational efficiency.	AP	4	13
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Or

	b	Choose and explain a material handling system to carry the materials up and down.	AP	4	13
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15.	a	Select the various bulk handling equipment necessary to integrate for the continuous transportation of ore to the processing plant in an open mine.	AP	5	13
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Or

	b	Enumerate the criteria for selecting a robotic material handling system for a specific application.	AP	5	13
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*PART – C (Marks 1*15 = 15)*

<i>Q.No</i>		<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
16.	a	Distinguish between pallet loaders and unloaders concerning their applications and advantages.	AN	4	15
		Or			
	b	Analyze the potential risks associated with hoisting and lifting operations in a construction environment and discuss the strategies that can be employed to minimize these risks.	AN	4	15