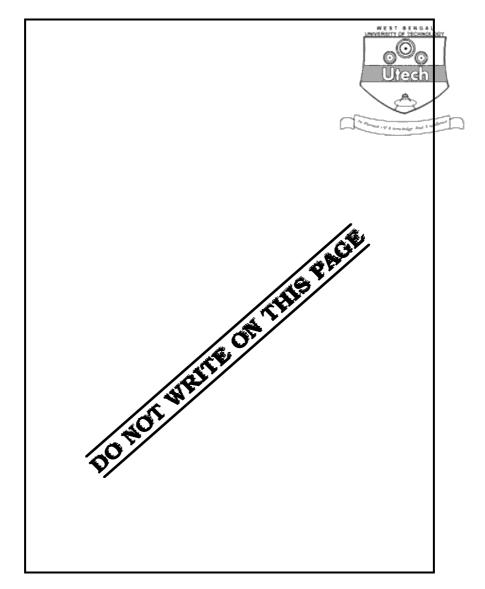
CS/M.Tech(MT)/SEM-2/MTI-205/09 MATERIAL HANDLING SYSTEM (SEMESTER - 2)

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1.	This Booklet is a Question-cum-Answer Booklet. The Booklet consists of 32 pages . The questions of this concerned subject commence from Page No. 3.														
2.	You hav paper.	You have to answer the questions in the space provided marked 'Answer Sheet'. Write on both sides of the paper.													
3.	Fill in	Fill in your Roll No. in the box provided as in your Admit Card before answering the questions.													
4.	Read th	Read the instructions given inside carefully before answering.													
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CS/M.Tech (MT)/SEM-2/MTI-205/09 MATERIAL HANDLING SYSTEM

SEMESTER - 2

Time: 2 Hours]

Full Marks: 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

		Answer any <i>five</i> questions. $5 \times 14 = 70$
1.	a)	What do you understand by "principles of material handling"?
	b)	State and explain any four of the material handling principles along with your suggestions to achieve these principles in shop floor.
	c)	What are the advantages and disadvantages of unitization and handling of unit loads?
2.	a)	What do you mean by "systems concept" of material handling?
	b)	What is sized bulk material and how will you specify its average size?
	c)	How packaging is relevant to material handling? What are the common packing methods?
3.	a)	Classify materials handling equipment into basic equipment type and briefly define these types.
	b)	What are the major specifications of a forklift truck?
	c)	Explain with a sketch the capacity rating of a FLT.
4.	a)	Find the carrying capacity of a 3 roll troughed belt conveyor for a free flowing material, in terms of belt width and trough angle.
	b)	Why in a belt conveyor, belt tensioning is necessary? Describe two different arrangements for belt tensioning.

c)

What is a closed belt conveyor?



5.	a)	State the basic constructional feature and advantages of a trolley conveyors.
		What are the different types of trolley conveyors used?
	b)	Explain the dynamic phenomena in a chain-sprocket drive. 6
	c)	Why wire ropes preferred over chains in hoisting equipment? 2
6.	a)	Work out the analytical expression for total resistance to motion of loads on a
		horizontal unpowered roller conveyor. 6
	b)	What is the requisite inclination angle of a gravity roller conveyor?
	c)	Explain the method of discharging of a positive discharge bucket elevator. In
		these elevators, how the buckets are fixed to the moving element? 5
7.	a)	What is the power required for conveying material in a horizontal screw
		conveyor?
	b)	Why is value of "artificial frictional coefficient" so large in a screw conveyor? 2
	c)	Explain, with a line diagram, functioning of a negative pressure pneumatic
		conveyor. What are its advantages and disadvantages?
	d)	Define "regular lay" and "lang lay" wire ropes. What difference do they make in
		operation?
8.	a)	Why multiple pulley system is used in hoisting mechanism? 2
	b)	Explain working principle of a grab bucket. 4
	c)	Explain with suitable sketch, working of a hand operated travelling hoist. 4
	d)	What is a wharf crane? What are the different types of wharf cranes? What is
		"level buffing system" and what is its importance in the operation of a wharf
		crane?