



This Exam measures the following ILOs: a3, a12, a13, b2, b6, c16, and c18

Assume any missing data.

Question 1

(15 Marks)

- 1) What is the definition of material handling? Why is it important?
- 2) Define the terms “containers” and “unitizers”.
- 3) What is the definition of unit load? What is the advantages of using it?
- 4) Compare between the large and small unit loads.
- 5) Discusses the important features of the containers?

Question 2

(15 Marks)

- 1) If the processing time of a product = 2-time units per piece and material handling time = 6-time units per move, what will be the minimum unit load size and corresponding number of transfers? Sketch the processing and moving time of 6 products.
- 2) What are the material transport equipment? Give 3 different examples of each one.
- 3) What are the automatic identification and communication equipment?
- 4) What are the common methods of unitizing a unit load?
- 5) What are the important factors used in conveyors, trucks, and cranes selection?

Question 3

(15 Marks)

- 1) What are the chutes conveyor problems?
- 2) A load of 250 Kp is conveyed from 3rd floor to the storage at the ground by spiral chute. The coefficient of friction = 0.45, height of one floor is 2.8 meters, $v_i = 0.3$ m/sec and $v_f = 2$ m/sec.

Find:

- (a) Angle of inclination
- (b) Total length
- (c) Conveying time
- (d) Work done by gravity force
- (e) If $v_i = v_f$, calculate the inclination angle



Elective courses 3 (Material Handling)

(نقل و تداول المواد) مقرن احباري ٣

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