



## BRAINWARE UNIVERSITY

Term End Examination 2023-2024  
Programme – B.Tech.(CE)]-2021  
Course Name – Material Handling  
Course Code - PEC-CE601A  
( Semester VI )

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

### Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) Economy in material handling related to
- |  |                                  |
|--|----------------------------------|
| a) employing gravity feed movements                                | b) minimizing distance of travel |
| c) by carrying material to destination without using manual labour | d) all of the mentioned          |
- (ii) Select the following application is used for belt conveyor
- |  |  |
|--|--|
| a) Material transportation over long distances | b) Material transportation within premises |
| c) Material transportation for processing      | d) All of the mentioned                    |
- (iii) Select the following is a property of bulk load
- |                    |                          |
|--------------------|--------------------------|
| a) Hardness        | b) Cake forming tendency |
| c) Suspension part | d) Weight                |
- (iv) Choose the following is supported from the ceilings
- |                    |                         |
|--------------------|-------------------------|
| a) Roller conveyor | b) Belt conveyor        |
| c) Chain conveyor  | d) All of the mentioned |
- (v) Identify the equipment that is used to transfer load in vertical direction
- |                  |                   |
|------------------|-------------------|
| a) Belt conveyor | b) Chain conveyor |
| c) Crane         | d) Screw conveyor |
- (vi) Select the direction of Material handling equipments used to transfer material.
- |                            |                         |
|----------------------------|-------------------------|
| a) Vertical direction      | b) Horizontal direction |
| c) Vertical and Horizontal | d) All of mentioned     |
- (vii) Select the material handling used in automobile industry
- |                   |                         |
|-------------------|-------------------------|
| a) overhead crane | b) trolley              |
| c) belt conveyor  | d) all of the mentioned |
- (viii) Identify from the following application is a belt conveyor used for.
- |  |  |
|--|--|
| a) Material transportation over long distances | b) Material transportation within premises |
| c) Material transportation for processing      | d) All of the mentioned                    |
- (ix) Select the correct activity of transporting any material from one place to another.

- a) Transportation  
c) Material handling
- b) Movement  
d) Loading
- (x) Identify from the following is not a hoisting equipment.
- a) Lift  
c) Conveyor
- b) Jack  
d) Truck
- (xi) Give an example of bulk load is
- a) Lump of material  
c) homogeneous particles
- b) single rigid mass  
d) heterogeneous particles
- (xii) Choose the correct from the following is a property of bulk load.
- a) Hardness  
c) Suspension part
- b) Cake forming tendency  
d) Weight
- (xiii) Identify the correct option from the following is not a hoisting equipment with lifting gear.
- a) Cage Elevators  
c) Pulleys
- b) Jib cranes  
d) troughed belts
- (xiv) Choose localization that does not require any previous information.
- a) Absolute  
c) Global
- b) Local  
d) Passive
- (xv) Select the load handling attachment is suitable for lifting and transporting metallic objects
- a) Hooks  
c) Magnets
- b) Forks  
d) Grapples

### Group-B

(Short Answer Type Questions)

3 x 5=15

2. Explain the principles of material handling. (3)
3. Classify the principle components of a belt conveyor. (3)
4. Sketch a bucket elevator & explain. (3)
5. Recall different types of gates used in bulk material handling system. (3)
6. Analyze the factors which should be considered when selecting a crane for a specific application. (3)

OR

Briefly explain the concept of load capacity in relation to crane operations. (3)

### Group-C

(Long Answer Type Questions)

5 x 6=30

7. Explain layout and characteristics of the building. (5)
8. Describe the classification of the conveyor system. (5)
9. Illustrate the working of an overhead conveyor. Discuss its features. (5)
10. Compare and contrast the advantages and disadvantages of rope and chain mechanisms in material handling (5)
11. Distinguish between Shrink wrapping vs. Stretch wrapping. (5)
12. Assess the efficiency of a rope and chain mechanism compared to hydraulic or pneumatic systems in material handling. (5)

OR

Assess the impact of wear and tear on the performance of a rope and chain mechanism. (5)

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