

**IV B.Tech II Semester Regular Examinations, Apr/May 2006**  
**MECHANICAL HANDLING EQUIPMENT**  
**( Common to Mechanical Engineering, Mechatronics and Production Engineering)**

**Time: 3 hours**

**Max Marks: 80**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

\*\*\*\*\*

1. Discuss the applications of using hydraulic hand lift trucks. [16]
2. (a) Explain the working principle of conveying equipment.  
(b) How do you classify conveyors? [8+8]
3. Explain the hydraulic transportation of coal. [16]
4. (a) Discuss the advantages of industrial trucks.  
(b) When and where the hand trucks are used? Explain briefly. [8+8]
5. Explain the working principle of hoppers with adjustable gates and chutes. [16]
6. (a) Using sketches distinguish between straight and spiral chutes.  
(b) How the final velocity of the material at the end of a long chute is controlled? [8+8]
7. Explain the following types of aerial transport systems  
(a) Cable ways  
(b) Rope ways [8+8]
8. (a) How are the cages balanced with counter weights?  
(b) Give an account on safety devices incorporated in elevators. [8+8]

\*\*\*\*\*

**IV B.Tech II Semester Regular Examinations, Apr/May 2006**  
**MECHANICAL HANDLING EQUIPMENT**  
**( Common to Mechanical Engineering, Mechatronics and Production Engineering)**

**Time: 3 hours**

**Max Marks: 80**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

\*\*\*\*\*

1. Discuss about the Driverless trains and wire-guided pallet trucks. [16]
2. Give the types of belt cleaners in belt conveyor. With sketches describe them.[16]
3. (a) How roller conveyor can be used to handle unit loads?  
(b) What are the differences between roller conveyor and belt conveyor? [8+8]
4. Discuss the main features of four wheeled powered drives such as fork lift, side loading trucks and straddle trucks with aid of sketches. [16]
5. What is a gate? Explain different mechanisms used in controlling the flow of materials through gates. [16]
6. (a) What are the uses of chutes in feeding equipment?  
(b) Write a note on the following types of feeding equipment.
  - i. Adjustable feed opening.
  - ii. Adjustable speed [6+5+5]
7. Compare the features of various types of hoists. [16]
8. (a) Discuss the salient features of motor driven grab bucket  
(b) Explain the methods for designing grab buckets. [8+8]

\*\*\*\*\*

**IV B.Tech II Semester Regular Examinations, Apr/May 2006**  
**MECHANICAL HANDLING EQUIPMENT**  
**( Common to Mechanical Engineering, Mechatronics and Production Engineering)**

**Time: 3 hours**

**Max Marks: 80**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

\*\*\*\*\*

1. (a) Discuss the relationship between plant layout and material handling equipments. [8]  
(b) Explain  
    i. Material handling in process layout and [4]  
    ii. material handling in product layout. [4]
2. (a) Explain the working principle of conveying equipment.  
(b) How do you classify conveyors? [8+8]
3. With a neat diagram explain the working of an apron conveyor. [16]
4. (a) What types of powered trucks are self loaders? Give their operating details.  
(b) What types of powered trucks are best suited to the movement of long length items such as pipe, bar stock or lumbars? [8+8]
5. With the help of a sketch explain the working of belt feeders. [16]
6. (a) What care should be taken while designing the feeding equipment to avoid spillage of materials?  
(b) Explain how chutes can be used for delivering different types of goods to different stations? [8+8]
7. Name the various hoists. What are their features? [16]
8. Sketch and explain a derrick crane. [16]

\*\*\*\*\*

**IV B.Tech II Semester Regular Examinations, Apr/May 2006**  
**MECHANICAL HANDLING EQUIPMENT**  
**( Common to Mechanical Engineering, Mechatronics and Production Engineering)**

**Time: 3 hours**

**Max Marks: 80**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

\*\*\*\*\*

1. Discuss the various types of multiple -wheel floor trucks with sketches. [16]
2. (a) Explain the working principle of conveying equipment.  
(b) How do you classify conveyors? [8+8]
3. (a) Discuss apron conveyor giving specific details about conveyor length, speed, capacity, construction method and applications.  
(b) Explain the various resistances that are to be overcome during apron drive. [10+6]
4. (a) What types of powered trucks are self loaders? Give their operating details.  
(b) What types of powered trucks are best suited to the movement of long length items such as pipe, bar stock or lumbers? [8+8]
5. What is meant by a hopper? Explain its uses in feeding equipments. [16]
6. What is a vibrating feeder? Explain its working principle. [16]
7. (a) State the various hoisting appliances and discuss general characteristics of hoisting machines.  
(b) How are roller chain and welded load chain produced? How they are arranged as chain? [8+8]
8. (a) Enumerate grabbing attachments for handling loose materials  
(b) Discuss self dumping tub with an aid of a sketch. [8+8]

\*\*\*\*\*