

IV B.Tech II Semester Regular Examinations, Apr/May 2008
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. Describe the working of Gantry cranes with suitable sketches. [16]
2. (a) What are conveyors? State their applications.
(b) How is power transmission requirement estimated in conveyors? [8+8]
3. (a) Explain about Pneumatic Ash conveyor.
(b) Give the details about Pneumatic Handling of Dusts with a neat diagram. [8+8]
4. (a) Discuss the advantage and limitations of IC Engine and electric powered trucks.
(b) What are the different types of forks used with industrial lift trucks. [8+8]
5. What is meant by a hopper? Explain its uses in feeding equipments. [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. What are the advantages of electric hoists over the other hoists? [16]
8. (a) Discuss the salient features of motor driven grab bucket
(b) Explain the methods for designing grab buckets. [8+8]

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1. (a) What are the various drives used for mechanical handling equipment?
(b) What are the basic specifications needed for the design and selection of handling equipments? [8+8]
2. (a) What are the types of belts used in belt conveyors? Explain them briefly.
(b) Briefly explain the design of a belt conveyor. [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 are the different types of industrial trucks ? Discuss briefly.
(b) Discuss the general applications of industrial trucks. [8+8]
5. What is meant by a hopper? Explain its uses in feeding equipments. [16]
6. What are the applications of vibrating feeders? Describe the different circumstances in which vibrating feeders are used. [16]
7. What are the advantages of electric hoists over the other hoists? [16]
8. (a) How are the cages balanced with counter weights?
(b) Give an account on safety devices incorporated in elevators. [8+8]

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1. Explain in detail about the classification and characteristics of materials that are looked out before selecting equipment for handling. [16]
2. (a) Explain the working principle of conveying equipment.
(b) How do you classify conveyors? [8+8]
3. (a) State the basic principles of pneumatic conveying system. List the advantages and limitations of the conveyors.
(b) Explain positive and negative pressure system adopted in flight pneumatic conveying. [8+8]
4. (a) With the help of neat sketch describe the constructional details of fork truck.
(b) Distinguish between fork trucks and hand trucks. [10+6]
5. What is a gate? Explain different mechanisms used in controlling the flow of materials through gates. [16]
6. Explain different types of mechanical feeders used in material handling. [16]
7. Describe a power hoist with neat sketch and give applications. [16]
8. (a) Discuss the salient features of motor driven grab bucket
(b) Explain the methods for designing grab buckets. [8+8]

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1. (a) What are the various drives used for mechanical handling equipment?
(b) What are the basic specifications needed for the design and selection of handling equipments? [8+8]
2. (a) Explain the working principle of conveying equipment.
(b) How do you classify conveyors? [8+8]
3. Draw a neat sketch of roller conveyor and describe its applications. [16]
4. What are the various types of fork trucks? Explain briefly with the help of simple sketches. [16]
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. Name the various hoists. What are their features? [16]
8. Sketch and explain some of the important excavators. [16]
