

CS/B.Tech(ME)/Even/6th Sem/ME-605A/2014

2014

Materials Handling

Time Alloted : 3 Hours

Full Marks : 70

The figure in the margin indicate full marks.

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

GROUP - A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any ten of following: 10x1=10

- i) Pulverised coal can be transferred by which of the following conveyor?
 - a) Belt conveyor
 - b) Pipe line
 - c) Roller conveyor
 - d) None of these
- ii) Major characteristics of bulk materials
 - a) Lump size
 - b) Bulk weight
 - c) Angle of repose
 - d) All of the above
- iii) B27M coded bulk material, which property is missing
 - a) Lump size
 - b) Bulk Density
 - c) Flowability
 - d) Abrasiveness
- iv) Stoppage of mobile equipment should be
 - a) Minimum
 - b) Maximum
 - c) Moderate
 - d) None of the above

- v) Self contained unit load
 - a) Pallet
 - b) skid
 - c) container
 - d) Bale
- vi) BIS standard for expandable pallets
 - a) IS 7276:1989
 - b) IS 9340:1993
 - c) IS 11982:1987
 - d) IS 13823:1993
- vii) Which one of the following technologies is used only for material handling, not actual production or assembly?
 - a) Robots
 - b) CNC
 - c) AGV
 - d) None of these
- viii) Materials which do not deteriorate on crushing can be used with
 - a) Chamber feeder
 - b) Screw feeder
 - c) Oscillating Feeders
 - d) None of the above
- ix) Blow tank is also known as
 - a) Screw feeder
 - b) Tank feeder
 - c) Chamber feeder
 - d) None of the above
- x) Stranded steel wire ropes are
 - a) Having one strand only
 - b) Of multi-strands
 - c) A bunch of steel wires
 - d) Locked coil ropes
- xi) Inner face of crane hooks are having
 - a) Larger cross section
 - b) Lesser stress
 - c) Zero load
 - d) Locking device
- xii) Slewing operation of crane is
 - a) For hoisting of load
 - b) A circular motion
 - c) Luffing movement
 - d) All of the above

CS/B.Tech(ME)/Even/6th Sem/ME-605A/2011

GROUP - B

(Short Answer Type Questions)

Answer any *three* of the following 3x5=15

2. What do you mean by Hoist? Write down the specification and uses of hoist. (1+4=5)
3. Define the Unit load. Write down the major advantages of unitization and handling of unit loads. (1+4=5)
4. Why power feeders are required to handling the bulk materials? Define Disk Feeder. (1+4=5)
5. Write down the different types of Pneumatic conveyor and its advantages. (5)
6. Briefly explain the FLT attachments. (5)

GROUP - B

(Short Answer Type Questions)

Answer any *three* of the following 3x15=45

7. Write down five Principles of materials handling. (3x5=15)
8. What is system concept? What are the limitations of FLT? With a schematic diagram show major parts of FLT. What do you understand by capacity rating of FLT? (3+3+5+4=15)
9. Explain briefly major components of a robot. With neat sketch classify robotic manipulators (6+9=15)
10. Write down the major points in selection and design of a belt conveyor. Determine required expression for belt width & belt tension. Why selection of idlers and its spacing is important in case of belt conveyor. (3+10+2=15)
- 11.a) What is an AGV? Classify and describe main navigation techniques followed.
- b) Describe the constructional details of EOT cranes. (2+2+4+7)

x-x-x