

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) - EXAMINATION – SUMMER 2017****Subject Code: 2151505****Date: 03/05/2017****Subject Name: Material Handling Systems****Time: 02:30 PM to 05:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1 SELECT RIGHT ANSWER (Each of one mark)**14**

1. Objective of plant layout is _____. A) minimum material handling B) minimum equipment utilization C) minimum manpower utilization D) minimum utilization of floor area
2. "O" type flow pattern used in _____ industry. A) bottling plant B) steel plant C) cement plant D) paper plant
3. _____ is useful where volume of manufacture is high and variety of jobs is less. A) product layout B) process layout C) line layout D) fixed position layout
4. Material handling and plant location is analyzed by _____. A) gantt chart B) bin chart C) emersion chart D) travel chart
5. Respirators used for _____. A) lung protection B) eye protection C) hand protection D) liver protection
6. _____ is concerned with the orderly storage and issuing of finished goods. A) tool room B) receiving area C) shipping area D) warehousing area
7. Bin cards are used in keeping the records of A) man power B) machine utilization C) entry & exit of workers D) material storage
8. _____ is a traction type conveyor. A) chute conveyor B) screw conveyor C) arm conveyor D) roller conveyor
9. _____ is used for handling loads over long rectangular area in shipyard. A) jib crane B) gantry crane C) bridge crane D) monorail
10. For narrow aisles, long loads (like pipes, angles) _____ truck is used. A) crane truck B) platform truck C) side load truck D) hand lift truck
10. Material handling consists of movement of material from
(a) one machine to another, (b) one shop to another shop
(c) stores to shop, (d) all of the above
11. Economy in material handling can be achieved by (a) employing gravity feed movements, (b) minimizing distance of travel, (c) by carrying material to destination without using manual labor, (d) all of the above
12. Principle of 'Unit load' states that (a) materials should be moved in lots, (b) one unit should be moved at a time, (c) both 'a' and 'b', (d) none of the above
13. Fork lift truck is used for
(a) lifting and lowering, (b) vertical transportation
(c) both 'a' and 'b', (d) none of the above
14. Cranes are used for
(a) lifting and lowering, (b) vertical transportation
(c) both 'a' and 'b', (d) none of the above

Q.2	(a)	Define ‘material handling’. Explain why material handling is very important in production?	03
	(b)	Describe various functions of material handling in brief.	04
	(c)	Write note : unit load concept	07
OR			
	(c)	write note: Modern trends in material handling	07
Q.3	(a)	Describe different types of Hoisting equipment.	03
	(b)	Explain the slewing mechanism.	04
	(c)	Explain pneumatic and hydraulic conveyors in detail.	07
OR			
Q.3	(a)	Explain care and safety in material handling.	03
	(b)	Describe various areas of material handling.	04
	(c)	Explain different types of Belt conveyor with neat sketch....	.07
Q.4	(a)	Describe material handling at workplace	03
	(b)	“Material handling activity is non productive activity” Criticize the statement	04
	(c)	Explain Gantry cranes and Jib cranes with the help of neat sketch.	07
OR			
Q.4	(a)	In which situation conveyors are preferred? Why?	03
	(b)	What is the role of an industrial engineer in material handling?	04
	(c) .	Explain the procedure for establishing a material handling system.	07
OR			
Q.5	(a)	What are the symptoms of poor handling?	03
	(b)	Describe briefly the construction and function of roller conveyor	04
	(C)	Explain briefly with diagram about the gantry crane.	07
OR			
Q.5	(a) .	Discuss how productivity can be improved with the help of excellent .material handling system design.	03
	(b)	Discuss about container used in material handling.	04
	(c)	What are the steps in analyzing materials handling problems? Explain them in brief. .	07