

PRINCE OF SONGKLA UNIVERSITY

FACULTY OF ENGINEERING

Midterm Examination : Semester 1

Academic Year : 2009

Date : July 31, 2009

Time : 13:30 - 16:30

Subject : 226-316 Material Handling Systems & Logistics

Room : หัวหูน

ทฤษฎีในการสอบ โทษชั้นต่ำปรับตกในรายวิชานั้น และพักการเรียน 1 ภาคการศึกษา

Directions :

- Can take any books to the room.
- Show your solutions and methods on your exam papers.
- Don't ask any questions to the proctors.** If you think you don't understand any questions, you should make a decision by your own.
- There are 9 problems. You must do all of them.
- Can use any calculators.

Name.....Code.....

Question	Full Points	Taken Points
1	5	
2	5	
3	5	
4	5	
5	10	
6	10	
7	10	
8	10	
9	10	
Total	70	

Assoc. Prof. Wanida Rattanamanee

Lecturer



Code.....

1. (5 points) Very few organizations deal with the final customer for a product. Most operations work upstream and from one step of the supply chain, often passing materials to internal customers within the same organization. How does the type of customer affect the organization of logistics and the measures of customer satisfaction?

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2. (5 points) The cost of logistics varies widely from organization to organization. What factors affect these costs? Are the costs fixed or can they be controlled?

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3. (5 points) What is logistics structure? How can it reduce logistics cost of companies.

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4. (10 points) Explain the meaning of these following sentences

4.1 Material handling is art of moving.

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4.2 Material handling is science of moving.

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4.3 Material handling is art of protecting.

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4.4 Material handling is science of protecting.

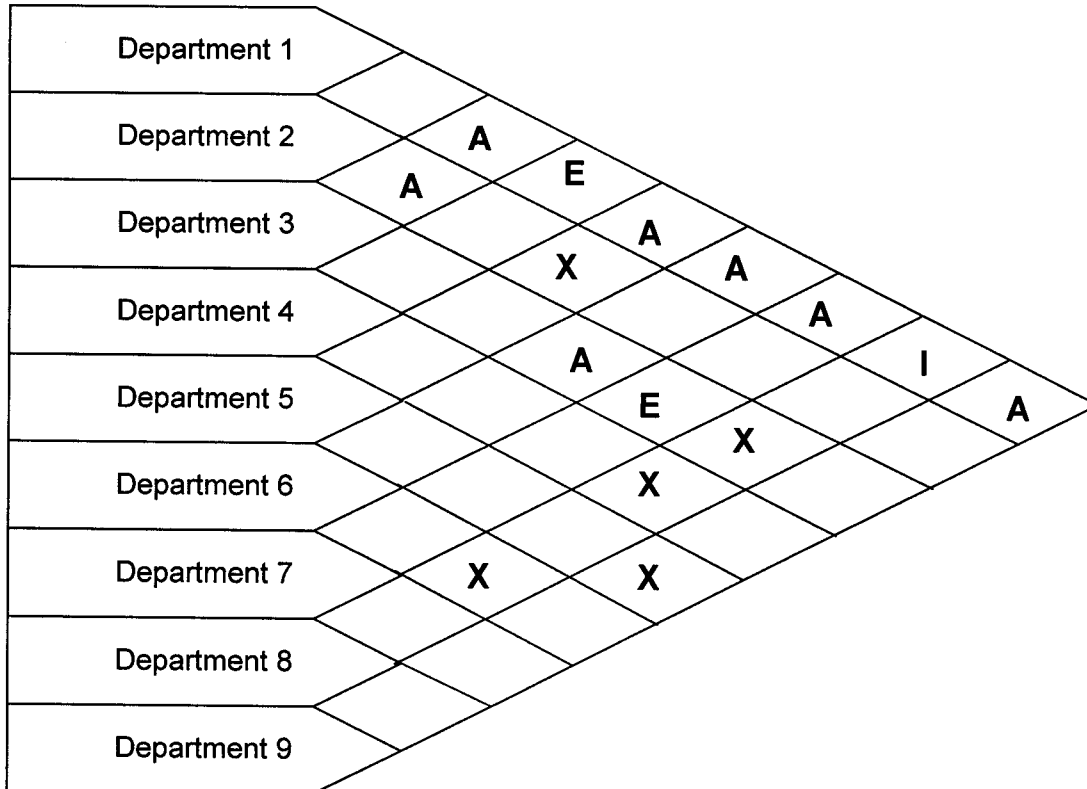
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4.5 Material handling is science of storing.

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6. (10 points) Assign nine automobile service departments to bays in a 3 × 3 grid so that the closeness ratings in the following matrix are satisfied. (The unimportant and ordinary-importance ratings have been omitted to simplify the problem.) The location of department 4 must be in the upper right-hand corner of the grid to satisfy a town ordinance.



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7. (10 points) Five departments are to be assigned to locations in the Figure Q7. (For technical reasons, department 6 must be assigned to the first cell of Figure Q7.)
 Transportation cost is \$2 per foot. The objective is to minimize total transportation cost. Information on interdepartmental work flows is shown in the following tables.
 Assign department with the greatest interdepartmental work flow first.

From \ To	1	2	3	4	5	6
1	-	125	62	64	25	50
2		-	10	17	26	54
3			-	2	0	20
4				-	13	2
5					-	5
6						-

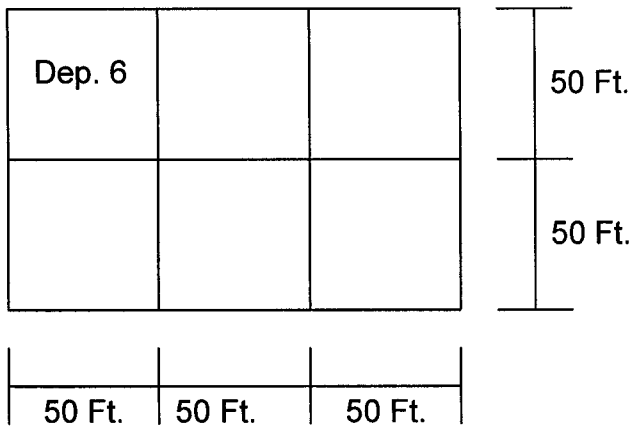


Figure Q7

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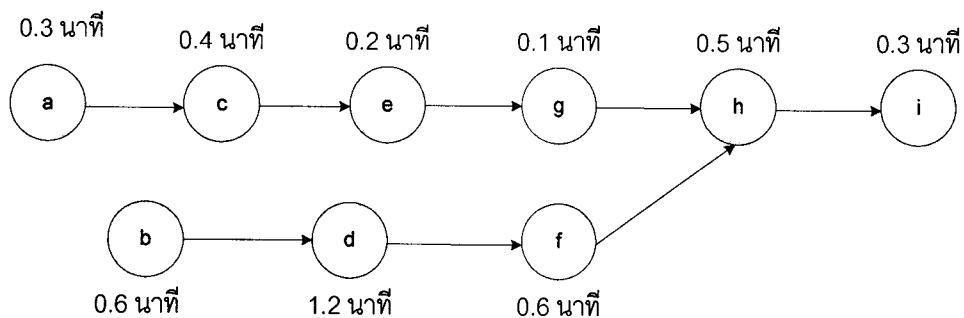
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8. (10 points) The tasks shown in the following precedence diagram are to be assigned to workstations with the intent of minimizing idle time. Management has designed an output rate of 275 units per day. Assume 440 minutes are available per day.



- 8.1 Determine the appropriate cycle time. (2 points)
- 8.2 What is the minimum number of stations possible? (2 points)
- 8.3 Assign tasks using the "positional weight" rule: Assign tasks with highest following times (including a task's own time) first. (2 points)
- 8.4 Compute efficiency. (2 points)

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9. (10 points) From the class presentations, answer these following questions?
9.1 From SR Trading Ltd. Company case study, what is the company product? How
does the company solve the logistic problems? **(4 points)**

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9.2 What is the Multi-model transportation? (3 points)

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9.3 From Thai Summit case study, what is the main idea of this case? (3 points)

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GOOD LUCK

