PRINCE OF SONGKLA UNIVERSITY FACULTY OF ENGINEERING

Midterm Examination: Semester 1

Academic Year : 2006

Date: July 31, 2006

Time: 09:00-12:00

Subject : 226-439 Logistics & Material Handling System

Room: A205

ทุจริตในการสอบ โทษขั้นต่ำปรับตกในรายวิชานั้น 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 clear any questions, you should make a decision by your own.
- ☐ There are 4 problems. You must do all of them.
- Can use any calculators.

Question	Full Points	Taken Points
1	30	
2	20	
3	20	
4	30	
Total	100	

Wanida Rattanamanee Lecturer

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1. (30 points) Explain the following questions.
1.1 What is the meaning of "Logistics" ? (10 points)
1.2 How was the Logistics theory applied to A380 (as show in Fig. 1)?
(10 points)
Fig. 1 A380

1.3 How was the Logistics theory applied to Deli Computer? (10 points)

2. **(20 points)** Five manufacturing departments labeled A, B, C, D, and E are to be assigned among the six sites, of size 10×10 feet each as shown in Figure 2. Four products are processed through the five departments according to the processing sequences and frequencies of movement between departments as shown in Table 1.

 Table 1 The processing sequences of each product and the frequencies of movement

 between departments

Product	Processing Sequence	Flow Frequency
1	A,B,C,E,D	200
2	A,C,B,C,D,E	250
3	A,B,D,E,C	200
4	A,C,D,B,E	300

1	2	3
4	5	6

Figure 2 Sites for locating the departments



2.1 Develop the frequencies From-to-chart and the distance From-to-chart between sites associated with the problem, assuming material movement between departments is from centered to centered and along the aisles only	
(select the shortest path between sites). (8 points)	
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2.2 Suppose an initial assignment of departments is below:	
Dept. A located in site 2, Dept. B located in site 4, Dept. C located in site 3,	
Dept. D located in site 1, Dept. E located in site 6.	
What is the cost associated with this assignment? If cost (baths) per trip	
between A and B is 100, A and C is 50, A and D is 50, B and C is 50, B and D	
is 100, C and D is 200. (6 points)	
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2.3 Develop the better layout from Question 2.2 and give the reason why yo	ıu
think the developed layout is better. (20 points)	
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3. (20 points) From two case studies were handed out in the classroom

"FIRST CASE STUDY: Home-Style Cookies Case"

From "the Case Study", answer these questions?

3.1 Briefly describe the cookie production process in term of flow chart and facility location. (5 points)

3.2 Design the m	aterial handling sys	tem for the process.	(5 points)
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inve	at factors cause the company to carry minimal amounts of cer intories? What benefits result from this policy? (5 points)
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4. (30 points) From two case studies were handed out in the classroom

"SECOND CASE STUDY : The US Postal Service Case "

From "the Case Study", answer these questions'	From	"the	Case	Study",	answer	these	questions'
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4.	1 Why is	s it im	portar	nt for	the	Postal	Service	e to	have	a t	nigh	volume	of	mail	to
	proces	ss? (5	points	5)											
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4.5 What results were achieved by the Postal Service's changes? (5 points)
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4.6 What effect will increased use of e-mail have on postal productivity? (5 points