PRINCE OF SONGKLA UNIVERSITY
FACULTY OF ENGINEERING

Midterm Examination: Semester 2   Academic Year: 2005
Date: 17th December, 2005   Time: 9:00-12:00
Subject: 225-708 Inventory Systems   Room: R300
Instructor: Boonsiri Limsakul

ทุจริตในการสอบ โทษขั้นต่ำปรับตกในรายวิชานั้น และพักการเรียน 1 ภาคการศึกษา

Direction

- There are 5 set of problems for this exam.
- Score for each question is as following.
  Question 1 – 15 marks
  Question 2 – 25 marks
  Question 3 – 25 marks
  Question 4 – 15 marks
  Question 5 – 20 marks

- All materials, books, and calculator are allowed.
- Write your name, student ID, and department on every pages of test material.

Student Name_____ Student ID_____

Question No.	Full Score	Assigned Score
1	15	
2	25	
3	25	
4	15	
5	20	

1. According to the National Industrial Conference Board of America's claim that say "company sales are usually affected by three basic factors: long-term growth trends, cyclical business fluctuations, and seasonal variation".

   1.1 Do you agree with the above statement?

   1.2 State any explanation support your answer above.

   1.3 Give an example of each basic factor.

ชื่อ_____ สกุล_____รหัสนักศึกษา_____ภาควิชา_____ชั้นปี____

2. A particular product is being evaluated for its economic order quantity. Storage is charged at $2 per unit per month, and this product does not share the particular storage facility. Purchase order cost is $85, interest rate is 25 percent per year, and capital cost of the product is $200 per unit. The demand rate for the product is 3000 unit per year.

2.1. Determine the EOQ value and total annual inventory cost for the product?

2.2. At what time intervals should the product be reviewed for reorder purposes? Assume 300 working days per year

3. Assume the same product in problem 2 is now one of many that use the same storage area

3.1. Determine the EOQ value and total annual inventory cost for the product?

ชื่อ_____ สกุล_____ รหัสนักศึกษา_____ ภาควิชา_____ ชั้นปี____

3.2 At what time intervals should the product be reviewed for reorder purposes?
     Assume 300 working days per year

4. Consider the inventory data given below.

Item	Item Cost ($)	Demand/Year	Item	Item Cost ($)	Demand/Year
A	10.00	1000	I	1.50	500
B	0.20	750	J	3.00	30
C	1.00	820	K	0.50	2200
D	14.00	5	L	0.01	1000
E	0.50	1620	M	0.05	1000
F	0.25	320	N	5.00	8
G	0.60	1000	O	3500.00	4
H	0.10	500	P	1.00	20

Discounting the fact that an ABC inventory system should encompass hundreds of items and not just 16 as above, suggest item classification into an ABC system. Do these data seem to follow Pareto's law? (show your works)

5. Assume the following inventory demand forecast:

Time Period	1	2	3	4	5	6	7	8	9	10	11	12
Demand	20	50	40	70	60	30	80	40	20	60	40	90

Carrying costs on average inventory are $0.50 per unit per time period and purchase order costs are $50 per order. Determine the total inventory cost over the 12 time periods if the LFL lot-sizing technique is used. (show your works)