

Prince of Songkla University
The Faculty of Engineering

Final Examination Semester 1

Academic Year 2004

Date : 1 October 2004

Time : 9.00-12.00

Subject : 226-383 Production and Operation Management

Room : R300

Name :

Student code :

Part	Full score	Score	Remark
1	45		
2	20		
3	35		
Total	100		

คำสั่ง

1. อนุญาตให้นำกระดาษชนิด A4 เข้าห้องสอบได้ 1 แผ่น (ต้องเป็นลายมือเขียนเท่านั้น) และส่งกระดาษ A4 แนบมาด้วยเมื่อส่งข้อสอบ
2. ห้ามนำเอกสารอื่นๆ เข้าห้องสอบ
3. นำ dictionary และ เครื่องคิดเลขเข้าห้องสอบได้ทุกรุ่น (ให้ลบข้อมูลที่เกี่ยวข้องกับเนื้อหาวิชานี้ออกให้หมด)
4. ตอบในกระดาษคำตอบนี้เท่านั้น เขียนรหัสให้ครบทุกหน้า
5. อนุญาตให้ใช้ดินสอได้

Dr. Klangduen Pochana

ทุจริตในการสอบ โทษขั้นต่ำปรับตกในรายวิชานั้น และพักการเรียน 1 ภาคการศึกษา โทษสูงสุดให้ออก



Student Code :

PART 1 Answer these questions. Show your calculation clearly. Assumption can be made as necessary.

1.1 (15 points) A local company produces a programmable CMMS for several industrial clients. It has experienced a relatively flat demand of 2,500 units per year for the product. The CMMS is produced at a rate of 10,000 units per year. The accounting department has estimated that it costs \$50 to initiate a production run, each unit costs the company \$2 to manufacture, and the annual cost of holding is based on a 30 percent of unit cost. Assume that there are 250 working days in a year.


- What is maximum level of the on-hand inventory?
- What is the optimal size of the production run?
- What is the total annual cost ?
- What is the time between the production runs?
- What is the cycle time?



Student Code :

1.2 (10 points) Categorize the following inventory items as type A , B , or C and identify what type of inventory management should be used in each type?

Item	Unit Cost (\$)	Annual (Units)
A	10,000	4
B	7,000	1
C	4,000	13
D	1,200	5
E	700	500
F	300	20
G	250	45
H	60	5,000
I	25	400
J	17	4,000
K	9	1,000
L	7	8,000
M	3	750
N	2	4,000
O	1	12,000

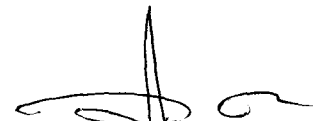


Student Code :

1.3 (10 points) Sunset company consumes 400 gallons of paint per month. The carrying cost per unit per year is 20 percent of purchase price, the order cost is \$200 per order. The supplier offers the price structure as follows:

Quantity Purchased	Price per Unit
1-99 units	150
100-199 units	125
200 or more units	100

Determine the optimal order quantity and the minimum cost.



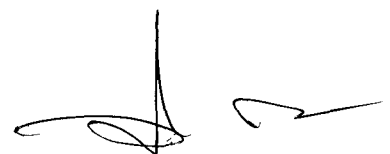
Student Code :

1.4 (10 points) The fixed and variable costs of TV set produced by COMBIND Co., Ltd. are given below. The manager needs to find a new site on the outskirts of Los Angeles.

Site	Fixed cost (\$ per year)	Variable cost (\$ per set)
A	100,000	150
B	125,000	130
C	130,000	110
D	145,000	90

Where should be the best site if the demand of the customer is

- a) 5,000 sets per year?
- b) 10,000 sets per year?



Student Code :

PART 2 (20 points) Explain these following words. Each question has 1 point.

No.	Question	Explanation
1	NC	
2	CAR	
3	IQA	
4	CB	
5	QMR	
6	Corrective action	
7	Preventive action	
8	First party audit	
9	Re-assessment	
10	CQI	
11	Quality appraisal cost	
12	External failure cost	



Student Code :

No.	Question	Explanation
13	Tier two supplier	
14	EDI	
15	Incoming inspection	
16	Outsourcing	
17	Perpetual inventory system	
18	Dependent demand	
19	Surveillance	
20	TQA	



Student Code :

PART 3 (35 points) Answer all questions. Long answer is recommended for these following questions.

1. What is the benefit of implementing ISO9000 in IE department? **(4 points)**

2. Do you think TQM can be applied to SMEs in southern Thailand? Give reasons to support your answer. **(4 points)**

3. How can we apply TQM to IE department? **(3 points)**

4. Explain the steps of ISO certification. **(3 points)**



Student Code :

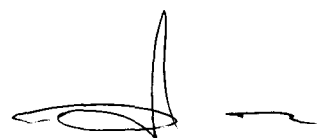
5. List the advantages and disadvantages of using one supplier and many supplier per item? **(3 points)**

6. What is Bullwhip Effect? **(3 points)**

7. What are the functions of inventory? **(3 points)**

8. What are the requirements for effective inventory management? **(3 points)**

9. What are needs for location decisions? **(3 points)**



Student Code :

10. What are the different considerations in location selection for service and manufacturing industries? **(3 points)**

11. List suitable criteria to choose suppliers in the automobile supply chain. **(3 points)**



Good Luck

Dr. Klangduen Pochana

A handwritten signature in black ink, consisting of a stylized, cursive script.