

PRINCE OF SONGKLA UNIVERSITY
FACULTY OF ENGINEERING

Midterm Examination: Semester 1

Academic Year: 2006

Date: August 1, 2006

Time: 9:00–12:00

Subject: 226–542 Productivity Management

Room: A203

Instructions

- There are 3 questions in 4 pages.
- Answer all 3 questions in the answer-book.
- All materials, books, papers, calculators and dictionaries are allowed. (Open-book exam)
- Total score is 80.

Questions	Full Score	Assigned Score
Q1	30	
Q2	30	
Q3	20	
Total	80	

Asst. Prof. Somchai Chuchom

ทฤษฎีในการสอบ โทษขั้นต่ำคือ ปรับตกในรายวิชาที่ทฤษฎี และพักการเรียน 1 ภาคการศึกษา

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Question 1 (30 marks)

Briefly answer the following questions:

- 1.1 What is productivity? How it is important?
- 1.2 Name and define the three basic forms of productivity. Using your own numbers build an example for each of these three productivities.
- 1.3 The productivity level of USA is still high, however, the productivity growth rates of USA is poor when compared to those of France, Germany and Japan. Discuss the impacts of low productivity growth.
- 1.4 'Employees are the greatest asset of an organization.' Comment on this statement with regard to productivity.
- 1.5 At least there are seven distinct measures of organizational system performance, list and examine how each measure might be considered.
- 1.6 What is the relationship between *Productivity Management* and *Organizational Systems Performance Management*?

Question 2 (30 marks)

2.1 An organizational system has produced 200 units of output A, 400 units of output B, and 1000 units of output C during a given period. It also has provided a wide variety and number of services during that period that were not measured. In addition, 50 units of output A, 10 units of output B, and 200 units of output C were partially completed during the period. The organizational system utilized the following resources:

Labor: 10 welders, 1700 hours, \$15/hour
5 fitters, 800 hours, \$12/hour
15 assemblers, 2500 hours, \$11/hour
3 supervisors, 500 hours, \$17/hour
2 foremen, 350 hours, \$19/hour

1 plant manager, 170 hours, \$25/hour
2 engineers, 350 hours, \$20/hour
3 secretaries, 500 hours, \$7.50/hour
2 salespeople, 360 hours, \$13/hour
1 procurement agent, 170 hours, \$11/hour
1 accountant/comptroller, 180 hours,
\$15/hour
1 maintenance person, 190 hours, \$10/hour

Materials, energy, and capital data were not collected. Plant capacity utilization was 90 percent. Using information provided above to develop some 'measures' of productivity for this organizational system. What are the weaknesses in the data? What are the weaknesses in your analysis?

2.2 Using the information presented in 2.1), and with additional data re-analyze the productivity of this organizational system. In a previous base or comparative period, the organizational system produced 150 units of A, 300 units of B, and 750 units of C. It also provided services during that period that were not measured. Ten units of A, 5 units of B, and 50 units of C were partially completed during that period. Additionally, 150 units of output D was discontinued later and was not produced at all during the period evaluated in 2.1). Resources used during the base period were:

Labor: 7 welders, 1200 hours, \$11/hour
3 fitters, 500 hours, \$7/hour
14 assemblers, 2000 hours, \$7/hour
3 supervisors, 500 hours, \$12/hour
2 foremen, 350 hours, \$15/hour
1 plant manager, 170 hours, \$20/hour
3 engineers, 500 hours, \$18/hour
4 salespeople, 670 hours, \$12/hour

1 accountant/comptroller, 180 hours,
\$11/hour

2 maintenance people, 350 hours, \$8/hour

Materials, energy, and capital data were available but not captured for the productivity analysis. Plant capacity utilization was 76 percent. Develop some measures of performance and productivity (ratios and indexes) for this period as well as for a comparison between the two periods. What are the weaknesses and problems with your analysis? What additional data would you like to have in order to validly assess the performance and productivity of this organizational system?

Question 3 (20 marks)

From the Case Study you were assigned in the class, highlight at least two main points you have learned. Demonstrate how to apply what you have learned above in the productivity management process.

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