

PRINCE OF SONGKLA UNIVERSITY  
FACULTY OF ENGINEERING

Final Examination : Semester 2

Academic Year : 2006

Date : February 20, 2007

Time : 9.00-12.00

Subject : 226-431 Manufacturing Automation System

Room : R300

**Direction**

- There are 7 questions. The total score is 100.
- Write your own answer in to the exam paper.
- All materials, books, calculators are allowed.

**Assoc. Prof. Wanida Rattanamane**

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

Question	Full Scores	Assigned scores
1	10	
2	10	
3	10	
4	12	
5	12	
6	11	
7	35	
รวม	100	

ทูลจรตใการสอบ โทษขัันต่ำ คือ พักการเรียรน 1 ภาคการศึกรษา และปรึบตกรใรรายวิชาที่ทูลจรต

GOOD LUCK

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1. Explain about PLC

- Its definition. **(2 points)**

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- Its advantages **(3 points)**

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- How can it improve the manufacturing processes? **(5 points)**

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2. Explain about the material handling system

- Its definition. **(2 points)**

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- Its advantages **(3 points)**

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- How can it improve the manufacturing processes ?**(5 points)**

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3. Explain about AGV

- Its definition. (2 points)

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- Its advantages (3 points)

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- How can it improve the manufacturing processes? (5 points)

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4. Explain about the JIT and lean manufacturing system

- Their definitions. (4 points)

JIT	Lean

- Their advantages (3 points)

JIT	Lean

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- Their disadvantages (3 points)

JIT	Lean

- Give some example of manufacturing which appropriate for the systems (2 point)

JIT	Lean

5. Explain about FMS and CIM

- Their definitions. (4 points)

FMS	CIM

- Their advantages (3 points)

FMS	CIM

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- Their disadvantages (3 points)

FMS	CIM

- Give some example of manufacturing which appropriate for the systems (2 point)

FMS	CIM

6. Explain about the group and cell manufacturing system

- Their definitions. (3 points)

Group	Cell

- Their advantages (3 points)

Group	Cell

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- Their disadvantages (3 points)

Group	Cell

- Give some example of manufacturing which appropriate for the systems (2 point)

Group	Cell

7. From visiting the factory,

7.1 What is the company' name? (1 points)

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7.2 What is its major product? (2 points)

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7.3 What is its production process? (write the flow process chart of the factory) (5 points)

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7.4 What is the major problem in manufacturing processes (from your own idea)?  
Give some evident supported your idea about the problem. **(10 points)**

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7.5 From the above problem, how can you apply the manufacturing automation knowledge to solve the problem? Write your answer step by step. (10 points)

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7.6 What is the type of the factory manufacturing system? **(2 points)**

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7.7 From your own idea, does the above system type appropriate for the factory?  
Give the reasons. What is the system type more appropriate than the present?  
**(5 points)**

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