

PRINCE OF SONGKLA UNIVERSITY
FACULTY OF ENGINEERING

Final Examination: Semester 1

Date: October 4, 2005

Subject: 226-409 Production Technology III

Academic Year: 2005

Time: 13:30-16:30

Room: A400

Instructions

- Calculator and note are not allowed.
- Dictionary is allowed.
- There are 5 parts in 6 pages.
- Total score is 50.
- Your answers could be in English or Thai.
- Please check all questions before starting to work.

Name:	Student ID.....
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Question #	Full Score	Your Score
1	10	
2	10	
3	10	
4	10	
5	10	
Total	50	

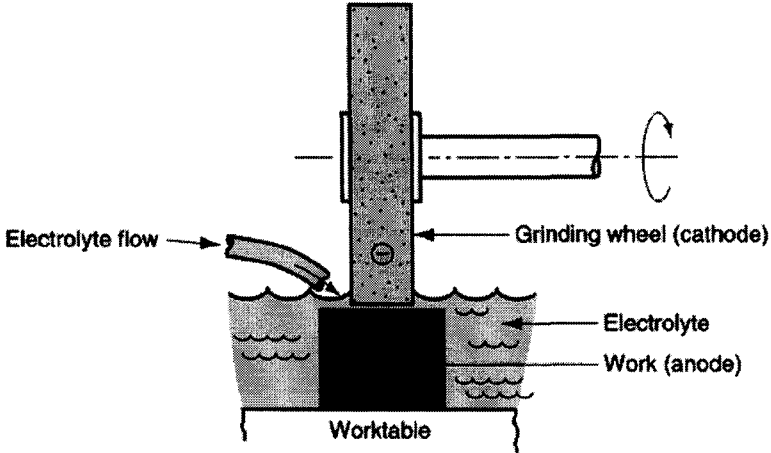
Mr.Srisit Chianrabutra

ทุจริตในการสอบโทษขั้นต่ำคือ พักการเรียน 1 ภาคการศึกษา และปรับตกในรายวิชานั้น

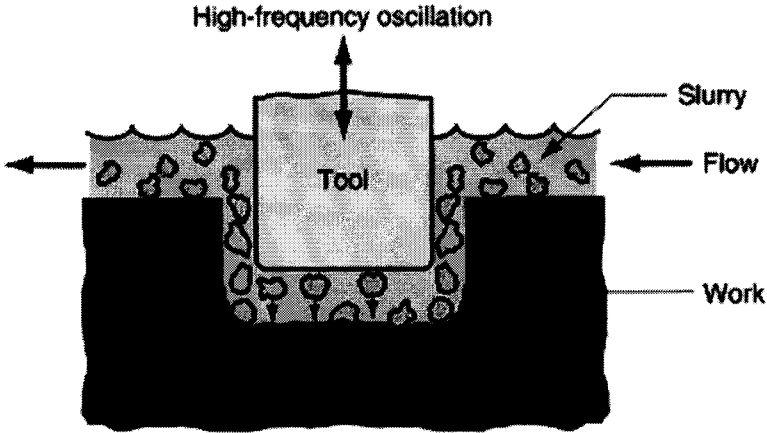
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1. Why are nontraditional machining processes important? (2 Points)
 - a.
 - b.

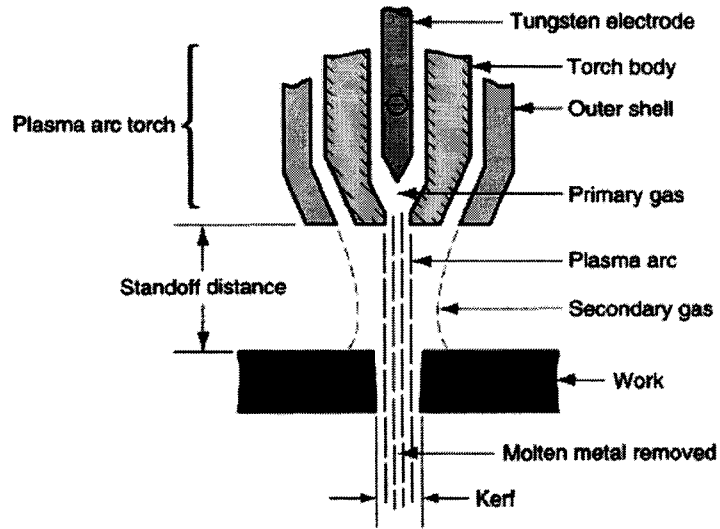
2. Classify nontraditional machining processes by type of energy used from the figures below and give a name of each process. (8 Points)



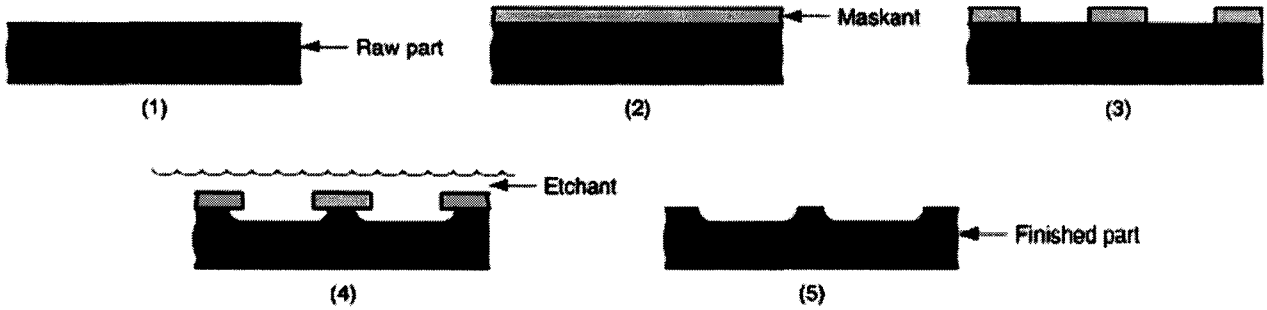
Classification	Name



Classification	Name



Classification	Name



Classification	Name

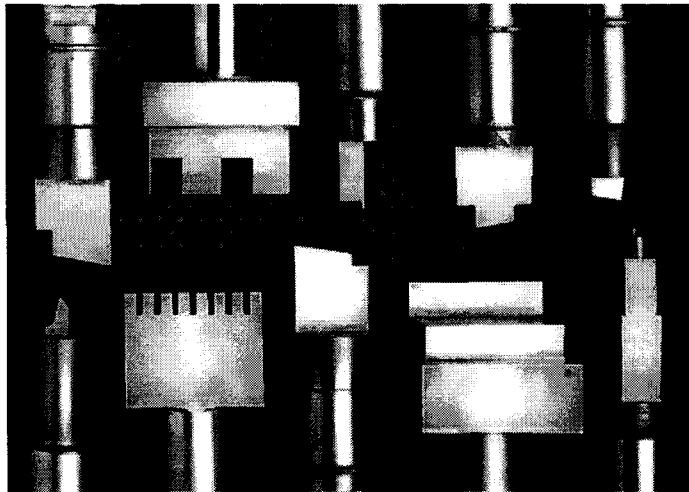
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Part 2: Electrical Discharge Machining (10 Points)

1. Electrical Discharge Machining (EDM) is accomplished with a system comprising two major components: (2 Points)

a.	
b.	

2. What is this figure? (1 Point)



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3. Evaluate graphite material. (4 Points)

a. Advantages:

1.....

2.....

b. Disadvantages:

1.....

2.....

4. What are the limitations of the EDM process? (3 Points)

a.

b.

c.

Supra

Part 3: High Speed Machining (10 Points)

1. What are advantages of the High Speed Machining? (3 Points)

- a.
- b.
- c.

2. List two types of non-contact bearings. (2 Points)

- a.
- b.

3. Assume each character commands 10 bits of data. A serial connection with a baud rate of 38,400 bits per second. A program block may require 20 characters. If chord lengths are 0.010 inch long in a fine-detail region, then how fast can it cut? (5 Points)

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Part 4: Laser Machining (10 Points)

1. How do the laser machining processes work? (2 Points)

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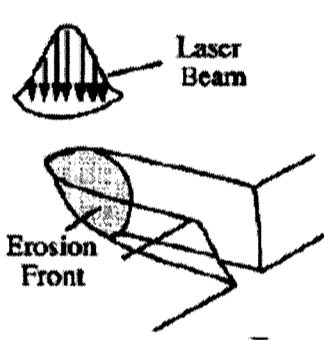
2. What are the problems of applying CO₂ on an Al workpiece or a Cu workpiece? (2 Points)

- a.
- b.

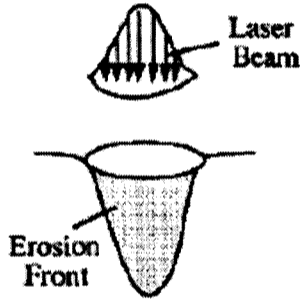
3. What are three unique characteristics of the laser machining process? (3 Points)

- a.
- b.
- c.

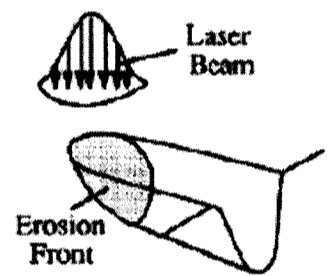
4. Name the type of the laser machining processes according to the figures below. (3 Points)



a.



b.



c.

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Part 5: Waterjet Cutting/Abrasive Waterjet Cutting (10 Points)

1. What are the differences between pure waterjet cutting and abrasive waterjet cutting? (1 Point)

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2. What are common types of the orifice material best for each following applications? (3 Points)

Application	Type
Abrasive Waterjet Cutting	
Pure Waterjet Cutting	
Abrasive & Pure Waterjet Cutting	

3. What is the "Jet Lag"? (1 Point)

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4. What are the primary factors that determine cutting speed? (5 Points)

- a.
- b.
- c.
- d.
- e.

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