## PRINCE OF SONGKLA UNIVERSITY FACULTY OF ENGINEERING

Final Examination: Semester II

Date: February 23, 2006

Subject: 226-306 Tools Engineering

Academic year: 2005

Time: 13:30-16:30

Room: R 300

## ทุจริตในการสอบ โทษขั้นต่ำปรับตกในรายวิชานั้น และพักการเรียน 1 ภาคการศึกษา

## **Instruction:**

- Answer all questions in the <u>answer</u> book.
- All notes, books and calculators are not allowed.
- Total score is 100 (50%).

## **Questions:**

6.

7.

What is the major difference between fixed-limit gages and indicating gages? (3 marks)
 How are unilateral tolerances applied to (a) plug gages and (b) ring gages? (3 marks)
 Explain the principle of pneumatic gaging. (3 marks)
 Select the necessary gage blocks to check dimension of 1.2576 inch. (3 marks)
 When is sight location used, and how is it accomplished? (3 marks)



17. What is meant by die clearance?

What is a spherical washer, and when is it used?

What is the advantage of tumble jigs?

(3 marks)

( = 111111110 )

(3 marks)

(3 marks)

18. Is the die clearance placed on the punch or die opening for a blanking operation? Why? (3 marks)

- 19. What methods are used to reduce cutting forces? (3 marks)
- 20. What is the shut height of a die set? (3 marks)

8.	Why is it often undesirable to use compressed air as a ch medium?	ip-removal (3 marks)
9.	How should jig feet be placed in relation to the drill bush	nings? (3 marks)
10.	What is the ANSI classification of drill bushings, and ho classification used?	w is each (3 marks)
11.	What are indexing jigs and how are they used?	(3 marks)
12.	How can the accuracy of contact between bearing surfactive and the workpiece resting upon it be checked?	
13.	How does clamping over unsupported surfaces produce holes in bored workpieces?	nonparallel (3 marks)
14.	What is a knock-off mandrel?	(3 marks)
15.	What is the bolster plate of a press?	(3 marks)
16.	How is the shut height of a mechanical press varied?	(3 marks)
17.	What is meant by die clearance?	(3 marks)
18.	Is the die clearance placed on the punch or die opening for operation? Why?	or a blanking (3 marks)
19.	What methods are used to reduce cutting forces?	(3 marks)
20.	What is the shut height of a die set?	(3 marks)
21.	What is the difference between the feed distance and the distance of a progressive die?	advance (3 marks)
22.	What are the major advantages of compound dies?	(3 marks)



- 23. What is meant by slug pulling? (3 marks)
- 24. Why are sectional dies used? (3 marks)
- 25. What is a direct pilot? (3 marks)
- 26. Why should indirect pilots be spring-loaded when used on material over 1/16-in.thick? (3 marks)
- 27. What is the advantage of spring-operated strippers? (2 marks)
- 28. Design a jig to drill all the holes in the workpiece shown in fig. I. Assume that all surfaces have been previously machined.(10 marks)
- 29. Design a milling fixture to mill the ½-in.slot of the workpiece shown in fig. I. Assume that the holes and all surfaces have been previously machined. (10 marks)

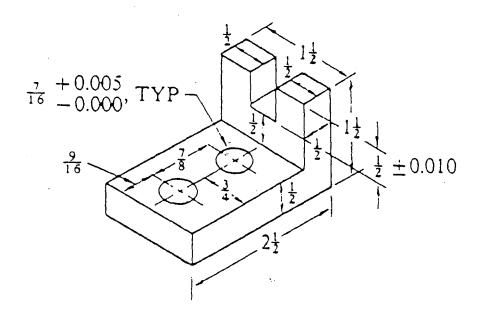


Fig. I.

Pichit Pitsuwan

February, 2006.

