PRINCE OF SONGKLA UNIVERSITY

FACULTY OF ENGINEERING

Midterm Examination : Semester 2 Academic Year : 2004

Date : December 24,2004 Time : 9.00-12.00

Subject : 226-306 Tools Engineering Room : A201

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ทุจริตในการสอบโทษขั้นต่ำ คือ ปรับตกในรายวิชาที่ทุจริต และพักการเรียน 1 ภาคการศึกษา

Instruction :

1. Answer all questions in the answer book.
2. A calculator with programming capability is allowed.
3. All notes and books are not allowed.
4. Total mark is 100 (40%) (3 marks each, except question 33)

ผศ.พิจิตร พิศสุวรรณ

ผู้ออกข้อสอบ

ธันวาคม 2547

Questions

1. What terms are commonly used to define the shape of a metal cutting tool?
2. What are the advantages of negative rake angles?
3. How does the process of chip formation contribute to vibration, or chatter, of the cutting tool?
4. What determines the type of chip?
5. Why is the BUE chip associated with ductile materials?
6. Why is the feed of a reamer higher than that for drilling?
7. Why is a SCEA of 15 to 30° an excellent choice for general machining (Unless determined by the work piece shape)?
8. What is the difference between clearance angles and relief angles?
9. Why are negative rake angles necessary when taking interrupted cuts with carbide tools?
10. What are the advantages of brazed carbide tools?
11. What is the major advantage of negative-rake inserts used in throwaway insert-type tools?
12. Why does the pressed-in chip breaker produce acceptable chips over a wide range of materials, feeds, speed, and depths of cut?
13. When selecting a milling cutter, why is it important to keep the cutter diameter as small as possible?
14. What is the advantage of eccentric relief on small milling cutters?
15. Why is chip formation produced in a drilling operation extremely complex?
16. Why is the relief on side cutting edge less than on the peripheral cutting edge?
17. What are the major advantages of an interlocking side milling cutter?
18. How is it possible for a drill to unwind during a drilling operation? How is this tendency reduced?
19. What should be done to correct for drill failure when the outer corners of the drill have been wiped off during the drilling operation?
20. When should reamers with a left-hand spiral be used?"

21. What are the major advantages of a spiral-point hand tap?
22. Why does tap breakage sometimes occur when tap is reversed?
23. What are the advantage of core drills?
24. What is the advantage of split point drill?
25. What is the major difference between fixed-limit gages and indicating gages?
26. Why should steel gage blocks not be wrung together any longer than necessary?
27. How are unilateral tolerances applied to (a) plug gages and (b) ring gages?
28. What is thread pin gages, and how are they used?
29. What are optical flats, and how are they used?
30. How does deep freezing increase the gage stability?
31. What are the advantages of the twisted-strip mechanism?
32. A taper is being checked with a 10-in, sine bar. The perpendicular distance is 3.007 in. What is the angle?
33. Select the necessary gage blocks to check dimension of 1.1465.in.(4 marks)

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Pichit Pitsuwan

December 2004