PRINCE OF SONGKLA UNIVERSITY

FACULTY OF ENGNEERING

Midterm Examination: Semester 1

Academic Year: 2007

Date: 5 August 2007

Time: 13.30-16.30

Subject: 226-316 FOUNDRY ENGINEERING

Room: A203

ทุจริตในการสอบ โทษขั้นต่ำคือปรับตกในรายวิชาที่ทุจริต
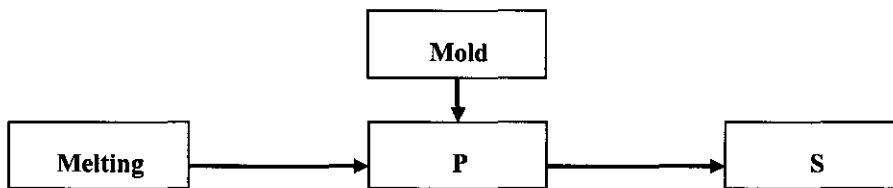และพักการเรียน 1 ภาคการศึกษา

Instruction:

1. Do all 22 questions.

2. The score appears after the end of question.

3. Total score is 100.

4. Books, notes and calculator are allowed.

5. Don't ask anyone.

6. Write your answers on the question sheets.

7. Write your name and ID no. on everypage.

Asst.Prof. Sane Thanthadalug

Instructor

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                          ┌──────────────┐
                          │     Mold     │
                          └──────┬───────┘
                                 │
                                 ▼
┌──────────────┐          ┌──────────────┐          ┌──────────────┐
│   Melting    │─────────▶│      P       │─────────▶│      S       │
└──────────────┘          └──────────────┘          └──────────────┘
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1. What is S in English? (4)

2. Why have we to make the corner of pattern in round shape? (4)

3. Why have we to put weight on the top molding flask? (4)

4. Tell me 4 different pattern materials? (4)

5. What are the components of molding sand? (4)

6. Why don't we use graphite as a mold wash for steel casting? (4)

7. How could you produce a small casting of complicate shape? (4)

8. How do you find the moisture percentage of molding sand? (4)

9. What is misrun? (4)

10. Quantitatively show me that the pressure of Cu-alloy against the mold surface is larger than molten steel casting? (4)

11. What is slush casting? (4)

12. Why does sodium silicate play important role for foundry industry? (4)

13. Why is graphite powder used as mold wash for iron casting? (4)

14. How many parts are there in gating system? What are they? (4)

15. How should the good gating system be? (4)

16. What is the optimal pouring time? (4)

17. How many types of gating? What are they? (4)

18. What is fluidity of molten metal? (4)

19. On what major factors does the fluidity depend? (4)

20. What is the composition factor of molten iron? (4)

21. The grey iron casting with 1,200 lbs of weight and 2 in. of average thickness. The pouring temperature and chemical composition are 2,900 F^{o} and 3.25% C, 2% Si, 0.12% P.   Find the pouring time. (10)

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22. Given W=60 lbs, d=0.100 lbs/cu.in, the pouring rate of 6 lbs/sec, top gating with h=5 in.,

round tapered sprue, 1:3:4 gating ratio, one ingates and single runner. Find A_B, A_R and A_g . (10)