

**PRINCE OF SONGKLA UNIVERSITY
FACULTY OF ENGINEERING**

**Midterm Examination : Semester 1
Date : 31 July 2004
Subject :226-303 Production Technology 1**

**Academic Year 2004
Time : 09.00-12.00
Room : A205, A 203**

ทูลจรตใ้การสอบ โทษั้ันต่ำ คือ ปรุ้บตคใ้รายวืษาที่ทูลจรต และพั้กการเรืยน 1 ภาคการศึ้ษา

Attempt all questions whose total marks are 100.

1. Describe the following topics concisely:
 - 3.1 Explosive welding.
 - 3.2 Critical current of electrical arc welding.
 - 3.3 Advantages and limitations of Submerged arc welding.
 - 3.4 Cutting with gas.
 - 3.5 Continuous cooling transformation (CCT) diagram of steel. (30 marks)
2. Explain the principle of the resistance welding and its application in Flash welding. (10 marks)
3. Compare the advantages and disadvantages between the mechanical fastening and welding for the fabrication purpose. (10 marks)
4. For TIG welding, one can employ 3 types of currents, namely, AC, DC straight polarity, or DC reversed polarity. Describe the characteristics, as well as the reasons for each type of current. (10 marks)
5. Describe the metallurgical reactions occurred during solidification of weld metal. (10 marks)
6. Explain the difference in the solidification of casting and weld-joint. (10 marks)
7. Describe the significant effect of microstructure to the properties of the weld. Also state factors that determine the resulted microstructure. (10 marks)
8. Classify manufacturing processes into types, also describe advantages of each type. (10 marks)

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Phichit Remngsangvatana
ผู้่อกข้อสอบ

