

Prince of Songkla University

Faculty of Engineering

Final examination: Semester 2

Academic year: 2005

Date: 4th March 2006

Time: 13.30-16.30

Subject: 226-211 Welding and Joining Technology

Room: A400

ทฤษฎีในการสอบ โทษขั้นต่ำคือพักรการเรียน 1 ภาคการศึกษาและปรับตกในรายวิชาที่ทฤษฎี

Instruction: Attempt all questions, totaling 100 marks.

1. Elaborate the statement: The geometry of the weld is more important than the static strength of the parent metal in determining its fatigue strength. (10 marks)
2. Explain the reason that aluminium weld yields more transverse shrinkage than steel weld. (10 marks)
3. Discuss the weldability of the following materials, covering tentative problems and recommendations. (30 marks)
 - 3.1 Nodular cast iron.
 - 3.2 Titanium alloy.
 - 3.3 Austenitic stainless steel.
 - 3.4 HT70 high tension steel.
 - 3.5 Copper alloys.
4. Describe the principle of resistance welding, and its application in flash welding. (10 marks)
5. Explain the reasons that cause blow holes in weldment, and give some preventive measures. (10 marks)
6. Explain the concept of preventing weld cracks, also outline the general good practices. (10 marks)
7. Briefly discuss the following topics concisely. (20 marks)
 - 7.1 Prevention of lamellar tearing type of crack in welding thick steel plates.
 - 7.2 Influence of alloying elements upon bond embrittlement.