

Prince of Songkla University

Faculty of Engineering

Final examination: Semester 2

Academic year: 2004

Date: 3 March 2005

Time: 13.30-16.30

Subject: 226-211 Welding and Joining Technology

Room: R201

ทฤษฎีในการสอบ โทษขั้นต่ำคือปรับตกในรายวิชาที่ทฤษฎีและพักการเรียน 1 ภาคการศึกษา

Instruction: Attempt all questions which have the total marks of 100.

1. One of the problems in welding aluminum or aluminum alloy is the occurrence of hydrogen blowholes in the weldment. Explain the causes and the preventive measures. (10 marks)
2. It is always a good advice to minimize the heat input during welding. Explain the reason, the consequence, and the methods to minimize the heat input. (10 marks)
3. Describe the weldability of the following materials, covering causes of tentative problems and the ways to avoid those problems: (20 marks)
 - 3.1 Austenitic stainless steel.
 - 3.2 Gray cast iron.
 - 3.3 High strength low alloyed steel.
4. Briefly discuss the following topics concisely: (40 marks)
 - 4.1 Dye penetrant test to detect welding flaws.
 - 4.2 The advantages of X-ray over ultrasonic technique in nondestructive testing.
 - 4.3 The desired properties of adhesive polymers and the bonding procedures.
 - 4.4 Microjoining in the fabrication of electronic devices.
 - 4.5 The method of drawing welding symbols.
5. Outline methods to prevent deformation caused by welding, as well as the techniques to straighten the deformed weld. (10 marks)
6. Discuss what you learnt in welding from the site visit to the gas separation plant construction of Trans Thai Malaysia (TTM). (10 marks)


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