

PRINCE OF SONGKLA UNIVERSITY

FACULTY OF ENGINEERING

Final Examination : Semester I

Academic Year : 2004

Date : October 2, 2004.

Time : 13.30-16.30

Subject : 226-303 Production Technology 1

Room : R 201

ทฤษฎีในการสอบ โทษขั้นต่ำปรับตกในรายวิชานั้น
และพักการเรียน 1 ภาคการศึกษา โทษสูงสุดให้ออก

Attempt all questions whose total marks are 100.

- 1 Describe the weldability of the following materials, covering causes of tentative problems and the ways to avoid those problems:
 - 1.1 High strength low alloyed steel.
 - 1.2 Cast iron.
 - 1.3 Titanium alloy.
 - 1.4 Brass.
 - 1.5 Aluminum alloy. (40 marks)
- 2 To minimize heat input has always been a good practice in welding. Explain the reasons, the consequence, and the methods to minimize the heat input. (10 marks)
- 3 Give a critical comparison between X-ray and ultrasonic flaw detector as applied to the nondestructive testing of the welds. (10 marks)
- 4 Describe the methods of preventing weld cracks. (10 marks)
- 5 Discuss the following topics concisely:
 - 5.1 Lamellar tearing of welded joint.
 - 5.2 Factors that causes residual stress in welded joint.
 - 5.3 Straightening of the deformed component caused by welding.
 - 5.4 Preheat and post heat in welding.
 - 5.5 Weld decay in austenitic stainless steel.
 - 5.6 Dye penetrant test. (30 marks)

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