

PRINCE OF SONGKLA UNIVERSITY
FACULTY OF ENGINEERING

Midterm Examination Semester 2
Date : 26 December 2004
Subject : 226-302 Fabrication Technology

Academic Year 2004
Time : 09.00-12.00
Room: หัวหุ่น

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ทฤษฎีในการสอบโทษขั้นต่ำ คือ ปรับตกในรายวิชาที่ทุจริต และพักการเรียน 1 ภาคการศึกษา

Instructions

1. Attempt all questions whose total marks are 100.
 2. No other materials except dictionaries are allowed.
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1. Discuss the advantages and disadvantages among various manufacturing processes.
(10 marks)
 2. Give a critical comparison between welding and the mechanical fastening for the fabrication purpose.
(10 marks)
 3. Explain the principle of the resistance welding and its application in spot welding.
(10 marks)
 4. Describe concisely about the following topics:
 - 3.1 Thermit welding.
 - 3.2 Effect of grain size on the mechanical properties of alloys.
 - 3.3 Critical current of MIG welding.
 - 3.4 Characteristics of Submerged arc welding.
 - 3.5 Three types of flames in Oxy-acetylene gas welding.(30 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. Describe the influence of chemical composition , cooling rate, and heat input upon the bond embrittlement of the heat affected zone . Also outline the methods of decreasing bond embrittlement.
(10 marks)
 7. Explain how the oxygen content and the structure of weld metal influence the toughness of weld metal.
(10 marks)
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