

PRINCE OF SONGKLA UNIVERSITY

FACULTY OF ENGINEERING

Midterm examination : Semester II

Academic year : 2003

Date : December 28, 2003.

Time : 13.30-16.30

Subject : 226-302 Fabrication Technology

Room : R200

INSTRUCTION : Attempt all questions whose total marks are 100.

1. Give a critical comparison between the mechanical fastening and adhesive joining for the fabrication purpose. (10 marks)
 2. Explain the principle of the resistance welding and its application in Seam welding. (10 marks)
 3. Describe concisely about the following topics:
 - 3.1 Effect of grain size on the mechanical properties of alloys.
 - 3.2 Critical current of MIG welding.
 - 3.3 Characteristics of Submerged arc welding.
 - 3.4 Three types of flames in Oxy-acetylene gas welding.
 - 3.5 Continuous cooling transformation (CCT) diagram of steel. (40 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. Indicate factors that influence 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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