



**UNIVERSITI KUALA LUMPUR  
Malaysia France Institute**

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**FINAL EXAMINATION  
JULY 2010 SESSION**

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**SUBJECT CODE** : FWB 12102  
**SUBJECT TITLE** : WELDING AND CUTTING PROCESS 1  
**LEVEL** : BACHELOR  
**TIME / DURATION** : 8.00pm – 10.00pm  
( 2 HOURS )  
**DATE** : 09 NOVEMBER 2010

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**INSTRUCTIONS TO CANDIDATES**

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1. Please read the instructions given in the question paper **CAREFULLY**.
  2. This question paper is printed on both sides of the paper.
  3. Please write your answers on the answer booklet provided.
  4. Answer should be written in blue or black ink except for sketching, graphic and illustration.
  5. This question paper consists of **FIVE (5)** questions. Answer **FOUR (4)** questions only.
  6. Answer all questions in English.
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**THERE ARE 2 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.**

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**INSTRUCTION: Answer only FOUR (4) questions.**

**Please use the answer booklet provided.**

### Question 1

- a. Describe the difficulty in the striking of an arc and give the cause of the difficulty encountered?  
(5 marks)
- b. The electrode angle consists of two positions that is work angle and travel angle. Explain what are the work angle and the travel angle.  
(8 marks)
- c. Give three (3) purposes of the coating on the electrode  
(12 marks)

### Question 2

- a. What are two shielding gas mainly used in GMAW and describe both their characteristic?  
*argon, CO2*  
(10 marks)
- b. The American Welding Society uses an alphanumeric system for GMAW wire classification. For example, a solid wire electrode may have the AWS classification ER70S-3, sometimes referred to as an S-3 wire. Define each letter and number represents in the AWS wire classification.  
(10 marks)
- c. Sketch and explain the recommended weaving patterns and torch positions for vertical up weld in GMAW  
(5 marks)

### Question 3

- a. What types of power sources are used in the Gas Tungsten Arc welding (GTAW) and describe the characteristics of each answer given.  
*helium, argon*  
(15 marks)
- b. Tungsten arc welding electrodes classified the electrodes on the basis of their chemical composition, size and finish. Briefly specified three (3) the types of tungsten electrode used in GTAW.  
(10 marks)

**Question 4**

- a. Give two (2) variation method of application in the Flux Core Arc Welding process.  
(8 marks)
- b. Describe the two (2) method application given in the answer above.  
(12 marks)
- c. What are the metal thicknesses ranges for the two variations?  
(5 marks)

**Question 5**

- a. There are three distinct types of oxy-acetylene flames, name and give explanation how to get the type of flame answered.  
(10 marks)
- b. Describe the use of regulator in the oxy-acetylene welding  
(10 marks)
- c. Why do we need Flashback Arresters to be mounted on the torch and regulator?  
(5 marks)

END OF QUESTION