



**UNIVERSITI KUALA LUMPUR  
MALAYSIA FRANCE INSTITUTE**

---

**FINAL EXAMINATION  
JULY 2010 SESSION**

---

**SUBJECT CODE** : FWD 12102  
**SUBJECT TITLE** : WELDING AND CUTTING PROCESS  
**LEVEL** : DIPLOMA  
**TIME / DURATION** : 12.30 pm – 2.30 pm  
(2 HOURS)  
**DATE** : 15 NOVEMBER 2010

---

**INSTRUCTIONS TO CANDIDATES**

---

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 **TWO (2)** sections. Section A and B. Answer all questions in Section A. For Section B, answer two (2) questions only.
  6. Answer all questions in English.
- 

**THERE ARE 3 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.**

---

**SECTION A (Total: 60 marks)****INSTRUCTION: Answer all questions.****Please use the answer booklet provided.****Question 1**

(a) Sketch and name four (4) basic welding joint? (8 marks)

(b) State four (4) advantages of the shielded metal arc welding process? (8 marks)

**Question 2**

List six important check points that you would use as safety precautions while welding with GMAW welding equipment. (12 marks)

**Question 3**

Explain the meaning of each of the characters in the electrode classification.

**E 6013** (8 marks)

**Question 4**

State three limitations of the GTAW process. (6 marks)

**Question 5**

Answer the following questions:

(a) Name three (3) types of arc cutting processes. (3 marks)

(b) State briefly the principle operation of Resistant Welding? (5 marks)

(c) State briefly the principle operation of Stud Weld? (5 marks)

(d) State briefly the principle operation of Submerge Arc Welding?

(5 marks)

**SECTION B (Total: 40 marks)**

**INSTRUCTION: Answer TWO (2) questions only.**

**Please use the answer booklet provided.**

**Question 1**

In DC welding power source, determine and explain the characteristic of current polarity of the following connection as shown in Figure 1 below.

(10 marks)

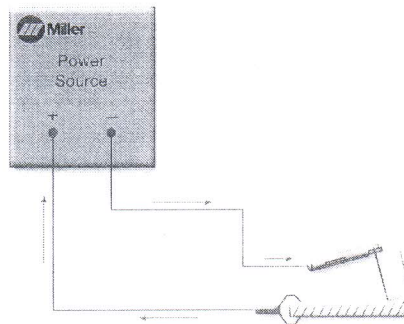


Figure 1

**Question 2**

Answer the following questions by refer to figure 2.

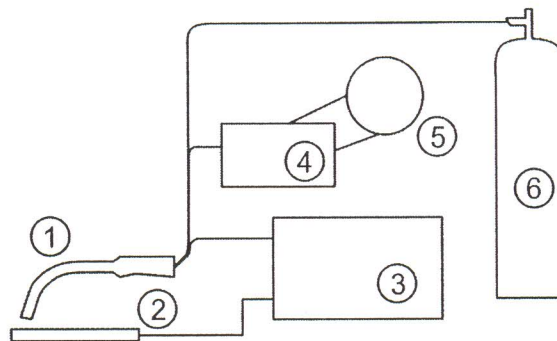


Figure 2: GMAW Set up.

(a) Name the equipments of Gas Metal Arc Welding (Figure 1)

(12 marks)

(b) What are the functions of equipment No 5.

(4 marks)

(c) Name two (2) shielding gases used in this process. (4 marks)

(d) Refer to figure 3.

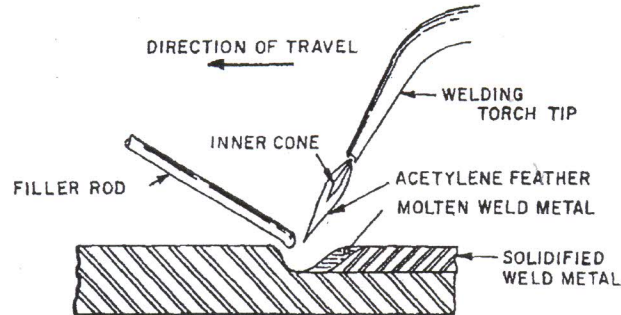


Figure 3

(i) List the possible fuel gases used in this process? (4 marks)

(ii) Name and sketch the three (3) type of flames in this process? (6 marks)

**Question 3**

Answer the following questions by referring to figure 4 below:

**ER70S-X**

Wire Figure 4: Specification for GMAW Filler

(a) Define 'E and R' according to the AWS specification (5 marks)

(b) What is the meaning of 'X'? (5 marks)

(c) What is the letter 'S' represent for? (5 marks)

(d) Determine the minimum tensile strength of the ER70S-X (5 marks)

**END OF QUESTION**