



UNIVERSITI KUALA LUMPUR
MALAYSIA FRANCE INSTITUTE

FINAL EXAMINATION
SEPTEMBER 2014 SESSION

SUBJECT CODE : FWD12203
SUBJECT TITLE : WELDING DESIGN AND SYMBOLS
LEVEL : DIPLOMA
TIME / DURATION : 9.00 AM – 11.30 AM
(2.5 HOURS)
DATE : 4 JANUARY 2015

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.
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THERE ARE 6 PRINTED PAGES OF QUESTIONS, EXCLUDING THIS PAGE

SECTION A (Total: 60 marks)

INSTRUCTION: Answer ALL questions.

Please use the answer booklet provided.

Question 1

a. Which of the following is not considered a type of joint?

- | | | | |
|----------|---------|-----------|-----------|
| A. Butt | B. Tee | C. Fillet | (2 marks) |
| D. Comer | E. Edge | | |

b. The type of joint formed when the two pieces to be joined are aligned in parallel planes and their edges overlap is called:

- | | | | |
|-----------|---------|---------|-----------|
| A. corner | B. T | C. edge | (2 marks) |
| D. lap | E. butt | | |

c. The type of weld having a generally triangular cross section and which is applied to either a T-, comer, or lap joint is called a:

- | | | | |
|----------------|---------------|----------------|-----------|
| A. flange weld | B. flare weld | C. fillet weld | (2 marks) |
| D. slot weld | E. spot weld | | |

d. The symbol used to represent a weld performed away from the welding shop is

- | | | | |
|--|--|--|-----------|
| A.  | B.  | C.  | (2 marks) |
| D.  | E.  | | |

e. The symbol used to represent a seam weld is

- | | | | |
|--|--|--|-----------|
| A.  | B.  | C.  | (2 marks) |
| D.  | E.  | | |

f. The symbol used to represent a fillet weld is

- | | | | |
|--|--|--|-----------|
| A.  | B.  | C.  | (2 marks) |
| D.  | E.  | | |

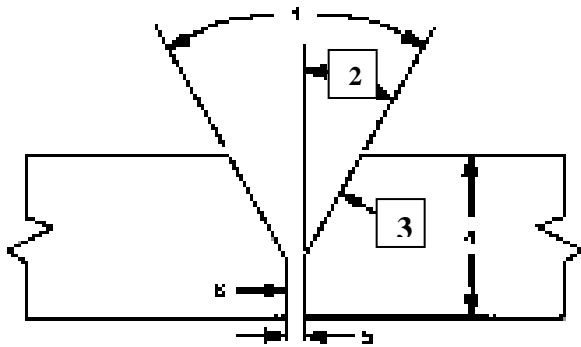


Figure 1

g. The bevel angle shown in **Figure 1** is labeled:

- A. 1
 - B. 2
 - C. 3
 - D. 4
 - E. 5
- (2 marks)

h. Number 3 shown in **Figure 1** is the:

- A. groove angle
 - B. bevel angle
 - C. groove face
 - D. fusion face
 - E. both c and d above
- (2 marks)

i. The weld-all-around symbol is

- A.
 - B.
 - C.
 - D.
 - E.
- (2 marks)

j. Which of the following welding symbols represent an ISO welding symbol with the weld located on the other side?

(2 marks)

- A.
- B.
- C.
- D.
- E.

Question 2

Answer the following questions;

- (a) What is the purpose of welding symbols? (4 marks)
- (b) Write the eight (8) components of welding symbols (8 marks)
- (c) Write four (4) types of groove weld (4 marks)
- (d) Write four (4) other types of weld other than groove weld. (4 marks)

Question 3

- (a) Identify the **type of fillet weld** and sketch an AWS welding symbol for the joint image in **Figure 1**. (10marks)

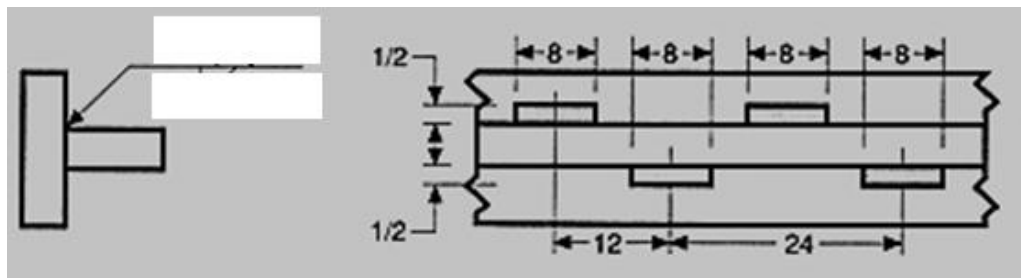


Figure 1

- (b) Identify the **type of groove weld** and write the correct welding terminology for labels number 1 to number 8 in **Figure 2**.

(10 marks)

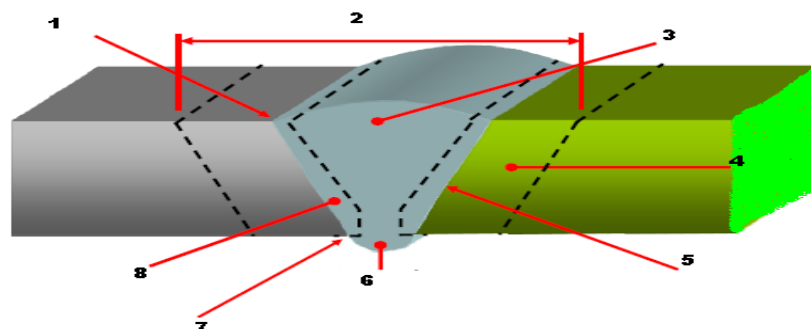


Figure 2

SECTION B (Total: 40 marks)

INSTRUCTION: Answer TWO (2) questions only.

Please use the answer booklet provided.

Question 4

- (a) Sketch a fillet weld welded on a tee joint showing the following parts;
 - a- design throat thickness
 - s- actual throat thickness
 - z- leg length

(5 marks)

- (b) Explain the weld and the welding symbol in **Figure 3**

(10 marks)

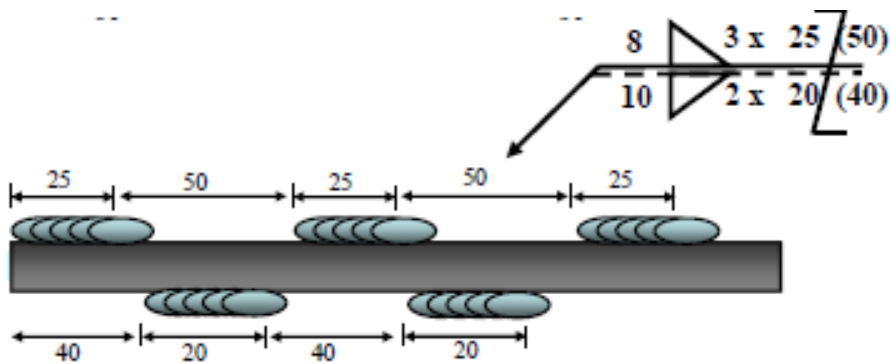
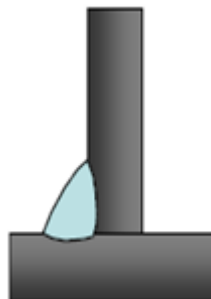


Figure 3.

- (c) Sketch an ISO welding symbol for fillet weld in Figure 7 showing that the weld is to be carried out on the other side.

(5 marks)



Question 5

Study the welding symbols in Figure 3 and Figure 4. Answer the questions carefully.

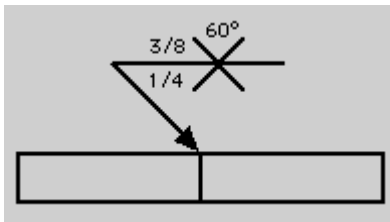


Figure 3

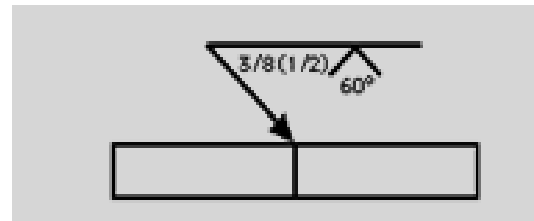


Figure 4

- (a) Determine the type of joint design of **Figure 3**. (2 Marks)
- (b) Determine the type of weld of **Figure 4**. (2 Marks)
- (c) Explain the meaning of 3/8 (1/2) and 60° in **Figure 4**. (6 Marks)
- (d) Write the welding positions for A,B,C,D,E,F,G,H,I and J in **Figure 5** with an appropriate ISO welding position. (10 marks)

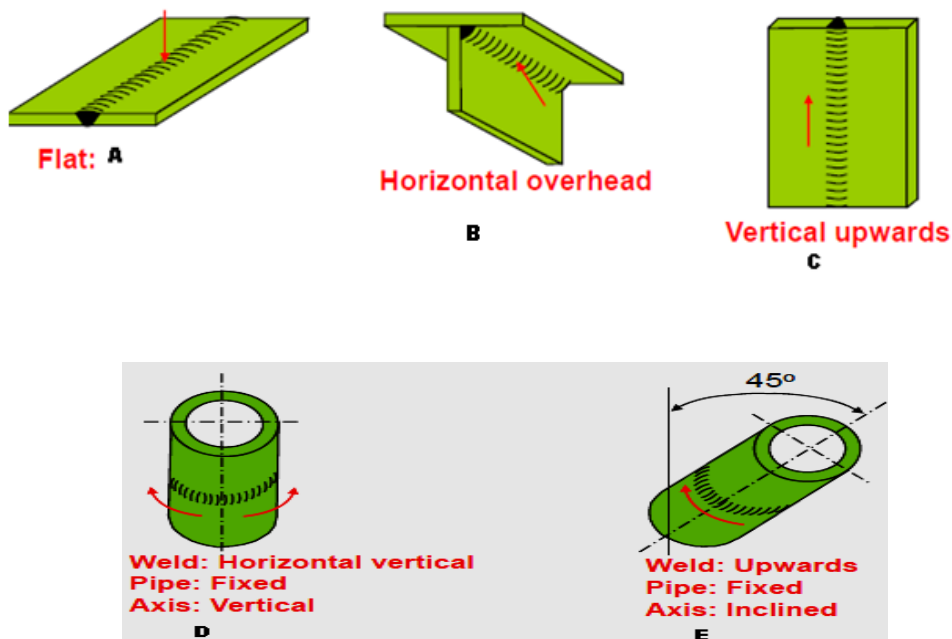
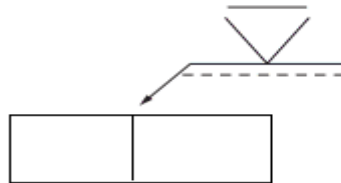


Figure 5

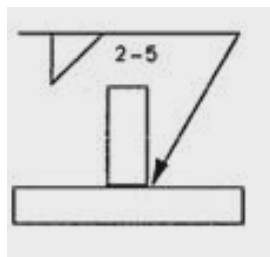
Question 6

Sketch the desired weld for (a), (b) and (c).

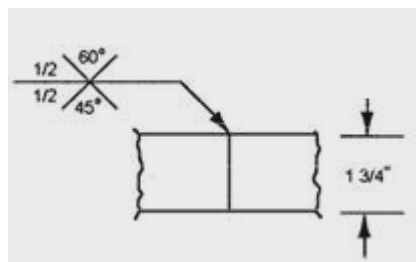
(a) (5 marks)



(b) (5 marks)



(c) (5 marks)



(d) Sketch an appropriate ISO and an AWS welding symbol for the weld shown below
(You have to sketch 2 (two) symbols)

(5 marks)



END OF QUESTION