



SET A

UNIVERSITI KUALA LUMPUR
Malaysia France Institute

FINAL EXAMINATION
JULY 2010 SESSION

SUBJECT CODE : FWB 22303
SUBJECT TITLE : JOINING TECHNOLOGY
LEVEL : BACHELOR
TIME/DURATION : 9.00 am – 11.00 am
(2 HOURS)
DATE : 14 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. Answer **ALL** questions in English.

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

INSTRUCTION: Answer ALL questions.
Please use the answer booklet provided.

Question 1

Discuss the following factors that usually considered by engineers during designing an engineered structure.

(a) Functionality (5 marks)

(b) Aesthetics (5 marks)

Question 2

Figure 1 show the schematic illustration of the various forces used in joining materials and structure: (a) mechanical force (b) chemical force (c) physical force. Discus types of joining/bonding made by these forces.

(15 marks)

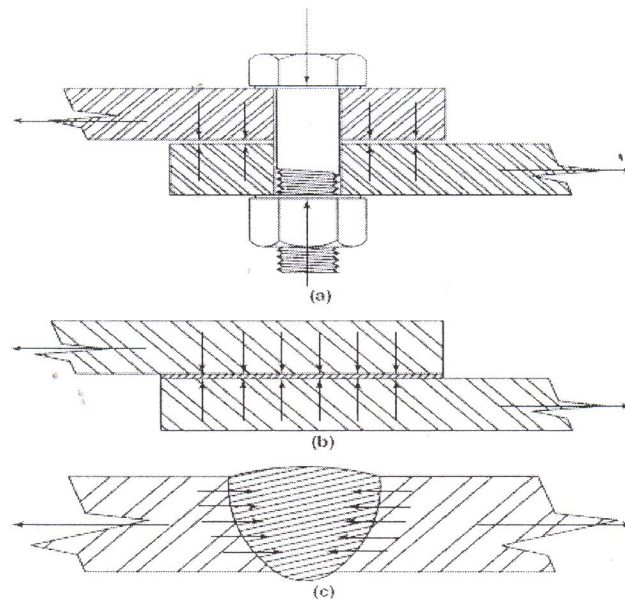


Figure 1

Question 3

Each specific joining process has relative advantages and disadvantages. Briefly explain disadvantages of:

- (a) mechanical fastening relative to all other processes (5 marks)
- (b) adhesive bonding relative to mechanical joining (5 marks)
- (c) soldering relative to welding (5 marks)
- (d) welding relative to adhesive bonding (5 marks)

Question 4

Briefly elaborate mechanical fastening and integral attachment of mechanical joining.

(20 marks)

Question 5

(a) For adhesive bonding, define the following terms:

- i. Adherends
- ii. Adhesive
- iii. Adhesion

(15 marks)

(b) Explain structural adhesive bonding and nonstructural adhesive bonding.

(10 marks)

Question 6

(a) Distinguish between brazing and soldering.

(6 marks)

(b) Explain **TWO (2)** example of brazing application.

(4 marks)

END OF QUESTION