



UNIVERSITI KUALA LUMPUR
Malaysia France Institute

FINAL EXAMINATION
SEPTEMBER 2014 SESSION

SUBJECT CODE : FWB22403
SUBJECT TITLE : WELDING DEFECTS
LEVEL : BACHELOR
TIME / DURATION : 3.00 PM – 5.30 PM
(2.5 HOURS)
DATE : 2 JANUARY 2015

INSTRUCTION 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 **FIVE (5) Questions**. Answer only **FOUR (4) Questions** only.
 6. Answer all questions in English.
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THERE ARE 2 PAGES OF QUESTION EXCLUDING THIS PAGE AND 1 ATTACHMENT

INSTRUCTION: Answer FOUR (4) questions only.

(Total 100 Marks)

Please use answer booklet provided.

Question 1

- a). Describe what is DISCONTINUITY and DEFECTS.
(5 Marks)
- b). Discontinuities can be configured into Linear and Non-Linear. Describe the differences and give examples.
(10 Marks)
- c). Explain why Linear defects are more harmful than the non-linear defects.
(10 Marks)

Question 2

- a). Explain why surface notches will generally cause fatigue failures more readily than those beneath the surface.
(5 Marks)
- b). List and describe **FIVE (5)** types of common base metal and weld discontinuities each.
(10 Marks)
- c). Describe the inspection techniques to detect the above discontinuities.
(10 Marks)

Question 3

- a). Cracks can be divided into Hot Cracks and Cold Cracks. Explain the differences and give examples.
(5 Marks)
- b). Describe and gives examples of Transverse and Longitudinal cracks. Explain the drill-hole technique in repairing cracks.
(10 Marks)
- c). Explain the methods to prevent Hydrogen Induced Cracking.
(10 Marks)

Question 4

- a). Describe the formation of Overlap and Convexity of a weld.
(5 Marks)
- b). Explain and show diagrammatically the differences between Incomplete Fusion and Incomplete Joint Penetration.
(10 Marks)
- c). Explain how the Weld Reinforcement affects the fatigue strength of welded structure.
(10 Marks)

Question 5

- a). Lack of side wall fusion is a planar defect that found in the weld metal. Explain **THREE (3)** causes of this defect.
(5 Marks)
- b). Explain the individual size and accumulative size permitted in 300 length weld as stated by acceptance criteria in the Attachment.
(10 Marks)
- c). Explain how you conduct the repair if the defect out of tolerance stated in the acceptance criteria.
(10 Marks)

END OF QUESTION