



UNIVERSITI KUALA LUMPUR
Malaysia France Institute

FINAL EXAMINATION
SEPTEMBER 2014 SESSION

SUBJECT CODE : FWB32503
SUBJECT TITLE : ADVANCE WELDING PROCESSES
LEVEL : BACHELOR
TIME / DURATION : 9.00 AM – 11.00 AM
(2 HOURS)
DATE : 30 DECEMBER 2014

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. The answer should be written in blue or black ink except for sketching, graphic and illustration.
5. Answer all questions in English.

THERE ARE 2 PAGES OF QUESTIONS EXCLUDING THIS PAGE.

INSTRUCTION: Answer All Questions.

Question 1

- (a) State TWO (2) types of High Frequency welding (HF).
(4 marks)
- (b) Illustrate the principle operation of the High Frequency (HF) welding by using appropriate figure.
(6 marks)
- (c) Compare the advantages and disadvantages of the High Frequency (HF) welding.
(6 marks)
- (d) Discuss the variation processes of the High Frequency (HF) welding.
(4 marks)

Question 2

- (a) Justify the principle operation of Electron Beam Welding (EBW).
(4 marks)
- (b) Differentiate the Electron beam Welding (EBW) and Laser Beam Welding (LBW) processes.
(6marks)
- (c) Identify the common metals welded by EBW.
(4 marks)
- (d) Describe the process variable of the EBW.
(6 marks)

Question 3

- (a) Define the meaning of **LASER**.
(2 marks)
- (b) Differentiate the principle operation between Carbon dioxide (CO₂) lasers Neodymium: Yttrium Aluminium Garnet (Nd; YAG) laser welding.
(8 marks)
- (c) Justify the typical Applications for Nd:YAG Laser.
(4 marks)
- (d) Discuss the advantages and disadvantages of laser welding.
(6 marks)

Question 4

- (a) Explain the principles operation of Friction Stir Welding (FSW).
(6 marks)
- (b) Draw and label the Friction Stir Welding (FSW) diagram accordingly.
(4 marks)
- (c) Differentiate the characteristics between Rotary Friction and Linear Friction Stir welding.
(5 marks)
- (d) Recommend the metal that can be welded by using the Friction Stir Welding (FSW).
(5 marks)

Question 5

- (a) Define the Termite welding (TW).
(2 marks)
- (b) Discuss the general application of the Termite Welding (TW).
(4 marks)
- (c) Discuss the general properties of the Termite weld.
(8 marks)
- (d) Discuss the general defects found in Termite welding (TW).
(6 marks)

END OF QUESTION