



**UNIVERSITI KUALA LUMPUR
Malaysia France Institute**

**FINAL EXAMINATION
SEPTEMBER 2014 SESSION**

SUBJECT CODE : FGB21103
SUBJECT TITLE : MANUFACTURING PROCESS
LEVEL : BACHELOR
**TIME / DURATION : 2.00 PM – 4.30 PM
(2.5 HOURS)**
DATE : 11 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 FIVE (5) questions. Answer FOUR (4) questions only.**
 - 6. Answer all questions in English.**
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THERE ARE FOUR (4) PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

**INSTRUCTION: Answer any FOUR (4) questions.
Please use the answer booklet provided.**

Question 1

- (a) Define manufacturing process in detail. (4 marks)
- (b) Determine three (3) types of plastics that applicable in manufacturing process. (3 marks)
- (c) Describe the advantages of using aluminum as a product in manufacturing. (5 marks)
- (d) Determine two (2) advantages and two (2) disadvantages of hot working process. (4 marks)
- (e) Discuss on how to ensure the cost of manufacturing process can be reduce by considering the concepts of classical product design and concurrent engineering. (4 marks)
- (f) Create a short summary of product development flow from product design until the final product. (5 marks)

Question 2

- a) Define machining process in details. (4 marks)
- b) Describe five (5) main functions of cutting fluid. (5 marks)
- c) Explain single point and multiple points cutting in machining process and discuss the machine and tool used for the two methods of machining process. (6 marks)
- d) Evaluate the comparison between countersink and counterbore process. (5 marks)
- e) Discuss the different criteria on determine the tool life in machining process. (5 marks)

Question 3

- (a) Analyze the difference between extrusion and drawing process in details.
(5 marks)
- (b) Determine the function of lubrication in drawing process and list down three (3) types of lubrication for drawing process.
(5 marks)
- (c) Discuss the importance of avoiding sharp edges, balanced shapes design and wall thickness in extrusion die design.
(5 marks)
- (d) Sketch a schematic diagram of the direct – extrusion process, and explain each components in the diagram.
(10 marks)

Question 4

- (a) Explain two categories of casting processes, and evaluate the advantages and disadvantages.
(10 marks)
- (b) Discuss in shorts, the flow of sand casting production sequence.
(6 marks)
- (c) Define pattern in sand casting and determine down two (2) types of pattern materials.
(4 marks)
- (d) Analyze why casting process is selected in producing engine block for automotive industry compare to other manufacturing process.
(5 marks)

Question 5

- (a) Describe any three (3) differences between brazing and soldering.
(6 marks)
- (b) Discuss in detail why Shield metal arc welding (SMAW) is the most common welding apparatus used in the market.
(4 marks)
- (c) Analyze why powder metallurgy is preferred compare to other manufacturing process.
(5 marks)
- (d) Create a simple flow chat that shows the process involves in powder metallurgy.
Explain each process
(6 marks)
- (e) Discuss blending process in powder metallurgy process.
(4 marks)

END OF QUESTION