



UNIVERSITI KUALA LUMPUR
Malaysia France Institute

FINAL EXAMINATION
SEPTEMBER 2013 SESSION

SUBJECT CODE : FGB 21103
SUBJECT TITLE : MANUFACTURING PROCESS
LEVEL : BACHELOR
TIME / DURATION : 2.5 HOURS
DATE :

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 **THREE (3)** questions only.
 6. Answer all questions in English.
-

THERE ARE 4 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

SECTION A (Total: 40 marks)

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

Question 1

Give the definition of *manufacturing process*?

(4 marks)

Question 2

Figure 1 show the illustration of various Bulk-deformation processes. Fill in the blank boxes under the figures with the correct operation names.

(6 marks)

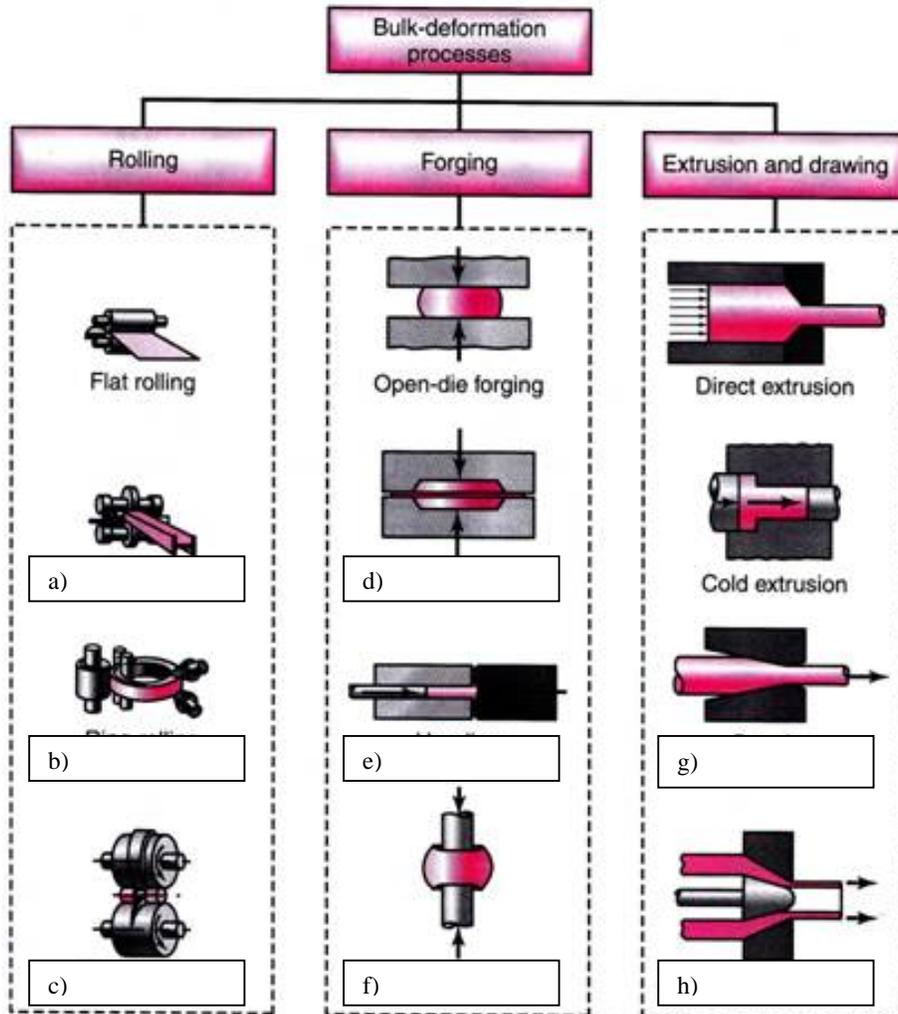


Figure 1: Illustrations of various bulk-deformation processes.

Question 3

Explain the two (2) effects of mold materials on fluid flow and heat transfer in casting operations.

(4 marks)

Question 4

Explain why does porosity have detrimental effects on the mechanical properties of castings?

Would physical properties, such as thermal and electrical conductivity, also be adversely affected by porosity? Explain.

(4 marks)

Question 5

Explain why the rolling process was invented and developed.

(4 marks)

Question 6

In sheet metal forming operations, friction condition at tool-metal interface plays an important role; give two (2) reasons why?

(4 marks)

Question 7

Give two (2) advantages and disadvantages of hot forming process of metal based products.

(4 marks)

Question 8

List 5 computer-integrated manufacturing process elements. How can you tell whether a certain part is forged or cast? Explain the features that you would investigate.

(4 marks)

Question 9

Explain why cold extrusion is an important manufacturing process.

(4 marks)

Question 10

Describe the reasons and advantages of coating cutting tools with multiple layers of different materials.

(4 marks)

SECTION B (Total: 60 Marks)

INSTRUCTION: Answer any THREE (3) questions.

Please use the answer booklet provided.

Question 11

(a) Give two (2) benefits of heating the mold in investment casting before pouring in the molten metal.

(10 marks)

(b) Are there any drawbacks? Explain.

(10 marks)

Question 12

(a) Give and explain four (4) reasons why machining operation is necessary when the product can be manufactured by casting and forming operation.

(8 marks)

(b) Name at least four (4) desirable properties in a cutting tool material.

(4 marks)

(c) Name and explain the four (4) types of cutting tool material.

(8 marks)

Question 13

- (a) Explain with an example the situation in which joining process become more essential when compared to the other manufacturing process.

(10 marks)

- (b) Describe what resistance welding process is and give two (2) different types of resistance welding operations.

(10 marks)

Question 14

- (a) Explain what is Gas Welding? Give two (2) advantages and two (2) disadvantages of gas welding process.

(10 marks)

- (b) Give and explain three (3) reasons why adhesive bonding is increasingly become widely used in conventional joining technique.

(5 marks)

- (c) Give a brief explanation of what is brazing and welding process. Differentiate between the two of them.

(5 marks)

END OF QUESTION