



UNIVERSITI KUALA LUMPUR
MALAYSIA FRANCE INSTITUTE

FINAL EXAMINATION
JULY 2010 SEMESTER

SUBJECT CODE : FGB 21102
SUBJECT TITLE : MANUFACTURING PROCESSES
LEVEL : BACHELOR
TIME/DURATION : 9.00 am – 11.30 am
(2.5 HOURS)
DATE : 13 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. This question paper consists of **ONE (1)** section. Section A. Answer **four (4)** questions only. Show the works.
 6. Answer all questions in English.
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THERE ARE 2 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

SECTION A (Total: 100 marks)

INSTRUCTION: Answer FOUR (4) questions only.

Please use the answer booklet provided.

Question 1

- a. Explain the terms “ blanking” and “piercing” in metal stamping technology. Add sketches for better visualization. (8 marks)
- b. An injection molding machine consists of an injection unit and a clamping unit. Explain the function of each unit. (8 marks)
- c. List down in sequence the injection molding cycle. (9 marks)

Question 2

- a. Explain the two major types of tool wear. Add diagrams for better visualization. (9 marks)
- b. What are common cutting tool coating materials? Why coated tools are preferable over uncoated tools? Give two reasons. (8 marks)
- c. Explain with the aid of diagrams the term speed (V), feed (f) and depth of cut (a) in turning process. (8 marks)

Question 3

- a. Explain with the help of sketches the terms “up milling” and “down milling” in a machining process. (8 marks)
- b. Calculate the feed rate (f) to mill the surface of low-alloy steel using 8-tooth carbide face mill of diameter 63 mm. Given that the cutting speed (V_c) is 150 m/min and feed per tooth (f_z) is 0.4 mm. (17 marks)

Question 4

- a. State two major types of welding process and give three (3) examples in each case. (10 marks)
- b. In term of process involved, how is Electron-beam welding differs from Laser-beam welding? Give three advantages of LBW over EBW. (8 marks)
- c. Consumable electrodes are available in coated and bare forms. State two purposes of coating on the electrode. (7 marks)

Question 5

- a. Explain with the help of sketches the two forms of mold namely:
i. Open mold
ii. Closed mold. (9 marks)
- b. Casting processes are divided into two broad categories, according to the type of mold used namely expendable mold casting processes and permanent mold casting processes. Describe the above two categories. (8 marks)
- c. State four (4) types of materials used to make mold for metal casting. (8 marks)

END OF QUESTIONS