



UNIVERSITI KUALA LUMPUR

Malaysia France Institute

FINAL EXAMINATION
JANUARY 2011 SESSION

SUBJECT CODE : FGD 21103
SUBJECT TITLE : MANUFACTURING TECHNOLOGY
LEVEL : DIPLOMA
DURATION : 12.30pm – 2.30pm
(2 HOURS)
DATE / TIME : 09 MAY 2011

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 EIGHT (8) questions. Answer SEVEN (7) questions only.
 6. Answer all questions in English.
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THERE ARE 5 PRINTED PAGES OF QUESTIONS,

SECTION A (Total: 60 marks)**INSTRUCTION: Answer ALL questions.****Please use the answer booklet provided.****Question 1.**

"Metal forming processes encompasses a wide variety of techniques, which make use of suitable force, pressure or stresses, like compression, tension and shear or their combination to cause a permanent deformation of the raw material to impart required shape."

List 5 processes that can be define as Hot Working Process and 5 processes that defined as Cold Forming Process in metal forming.

(10 marks)

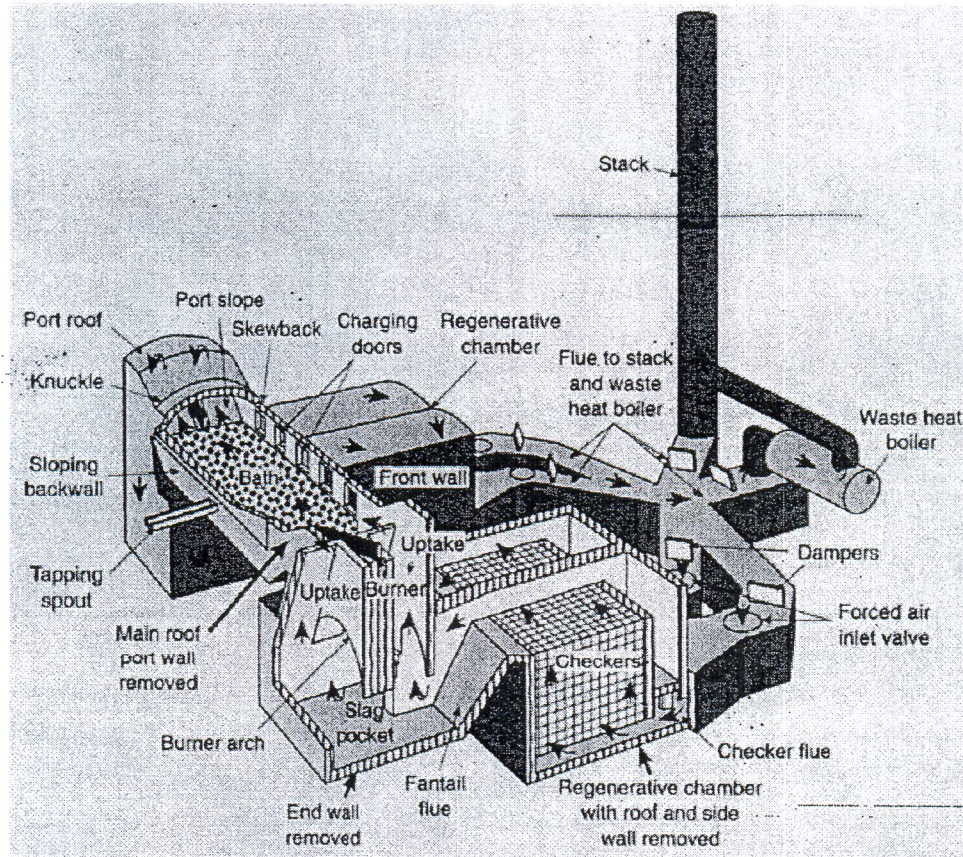
Question 2.

Differentiate between Hot Rolling Process and Cold Rolling Process that relate to the temperature and process environment.

(10marks)

Question 3.

Name the furnace below and its function in the primary process of metal production.



(10 marks)

Question 4.

"It is therefore interesting and useful to consider this in the context of sheet forming. To successfully design the tooling for operations for bending requires a knowledge of the major parameters associated with bending, which include: minimum bend radius, the spring-back angle and the press force.

By using a sketch diagram and explanation, display the meaning of minimum bend radius, the spring back and the force angle that stated as statement above.

(10 marks)

Question 5.

Gives 5 advantages and 5 disadvantages of using Welding for joining.

(10 marks)

Question 6.

"Improper clearance will require greater energy for shearing (energy is the area below the force-distance plots) and will cause excessive burring on the cut edge. Usually the optimum clearance is between 4% and 8 % of the sheet thickness"

By using a sketch diagram, display the meaning of shearing clearance that described by the statement above.

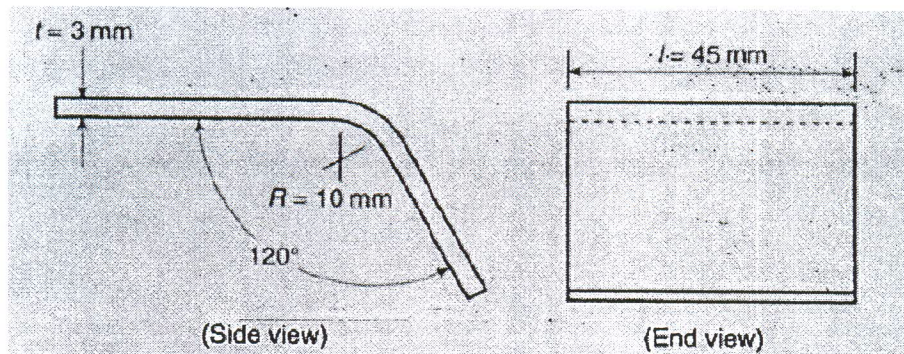
(10 marks)

SECTION B (Total: 40 marks)

Please use the answer booklet provided.

Question 7.

A piece of sheet metal is to be bent using a wiping die as shown in Figure below. The metal has a modulus of elasticity of 180GPa, a yield strength of 320MPa and a UTS of 450 MPa. What will be the spring-back radius of curvature and approximately what punch force will be required if the die radius is 10 mm?



(20 marks)

Question 8.

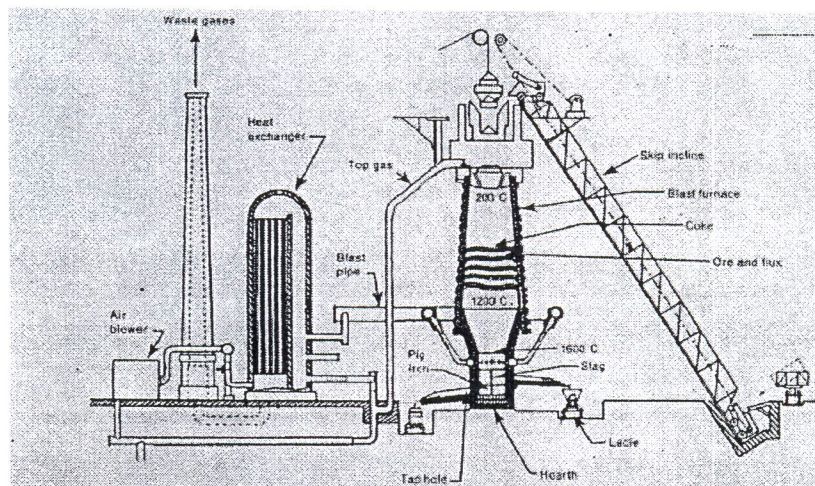


Figure above is a primary process of metal production furnace. Gives a name of the furnace and describe about the process of this furnace.

(20 marks)

Question 9.

There are 3 types of Welding Flame.

- i) Neutral Welding Flame.
- ii) Carburizing Welding Flame.
- iii) Oxidizing Welding Flame.

Please give a brief description of 2 listed flames that differentiate them.

(20 marks)

END OF QUESTION