



UNIVERSITI KUALA LUMPUR
Malaysia France institute

FINAL EXAMINATION
SEPTEMBER 2013 SESSION

SUBJECT CODE : FFD 36103
SUBJECT TITLE : CNC TURRET PUNCHING PROGRAMMING
LEVEL : DIPLOMA
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 TWO (2) questions only.
 6. Answer all questions in English.
 7. G- Code table is appended.
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THERE ARE 5 PAGES OF QUESTIONS AND 1 PAGE OF G-CODE TABLE EXCLUDING THIS PAGE.

SECTION A (Total: 30 marks)**INSTRUCTION: Answer ALL questions.****Please use the answer booklet provided.****Question 1**

- (a) List out **FOUR (4)** general precaution when you determine the punching sequence in the Turret punching programming?
(4 marks)
- (b) Why must the value of the punch and die clearance be check before running the machine?
(2 marks)
- (c) List **FOUR (4)** types of special cutting tool in the *Turret Punching Machine*
(2 marks)
- (d) Give **TWO (2)** functions of the MDI mode in the Turret punching programming.
(2 marks)

Question 2

- (a) Describe **FIVE (5)** safety devices that are equipped on Arcade 210 to protect the operation against operational hazards and the machine from damage.
(5 marks)
- (b) Describe what happen when G50 in the G code programming was not included.
(2 marks)
- (c) What is your understand for the meaning of *Dead Zone Area* in Turret punching programming?
(2 marks)
- (d) G 72 refers to the.....in CNC programming.
(1 marks)

Question 3

The required force to punch the worksheet must not exceed the force of machine Arcade 210.

The required punching force is obtained by the following formula:

$$P \text{ (ton)} = \frac{A \text{ (mm)} \times t \text{ (mm)} \times r \text{ (kg/mm)}}{1000}$$

Where P: Force required

A: Length of cut edge

t : Thickness of worksheet

r : Shearing strength of worksheet

With the above information given, answer the question below;

- a) Determine the tonnage that is needed to punch holes with a diameter of 30 mm on a mild steel plate with a thickness of 6 mm and a shearing strength of 40 kg/mm. Show your calculations.

(5 marks)

- b) Determine the tonnage that is needed to punch a rectangular hole of the size of 20 mm x 20 mm on a stainless steel plate with a thickness of 3 mm and a shearing strength of 60 kg/mm. Show your calculations.

(5 marks)

SECTION B (Total: 70 marks)

INSTRUCTION: Answer TWO (2) questions only.

Please use the answer booklet provided

Question 1

The G –Code program that you write must follow the sequence number. You are given the following tools;

- a) Round tool dia.20 mm T18;
- b) Square tool 10 x 10 mm T12 ;
- c) Square tool 20 x 20 mm T19 ;
- d) Rectangle tool 30 x 3mm T5; (Auto-index)

From the above information, write a G-Code program for the drawing below;

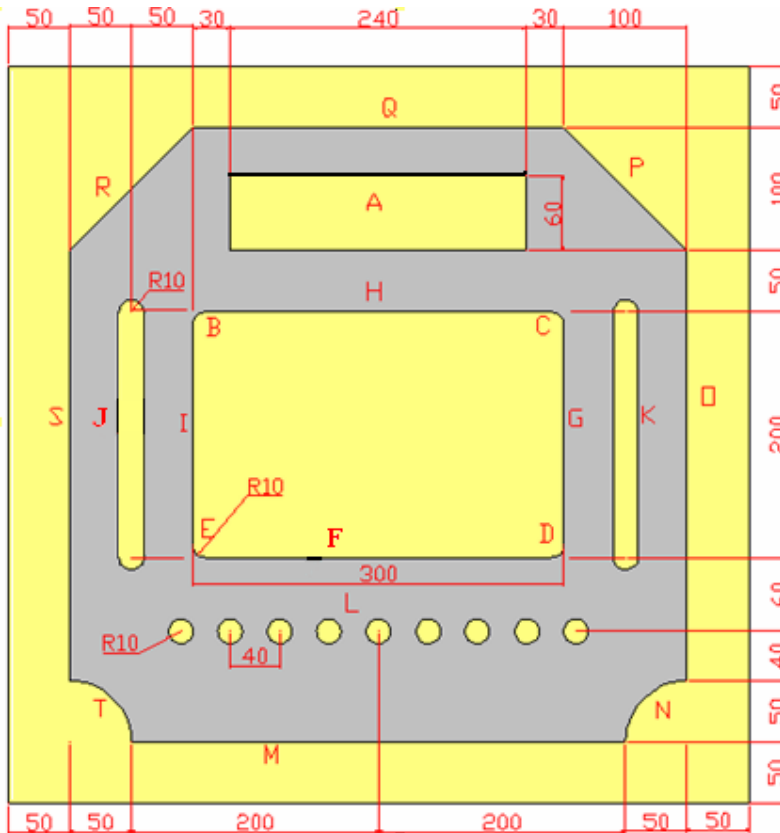


Figure 1: Cabinet bracket

(35 marks)

Question 2

The G –Code program that you write must follow the sequence number. You are given the following tools;

- a) Round tool diameter 20 mm T 18
- b) Square tool 10 x 10 mm T 12.
- c) Square tool 20 x 20 mm T 13.
- d) Rectangle tool 30 x 3mm T5; (Auto-index)

From the above information, write a G-Code program for the drawing below;

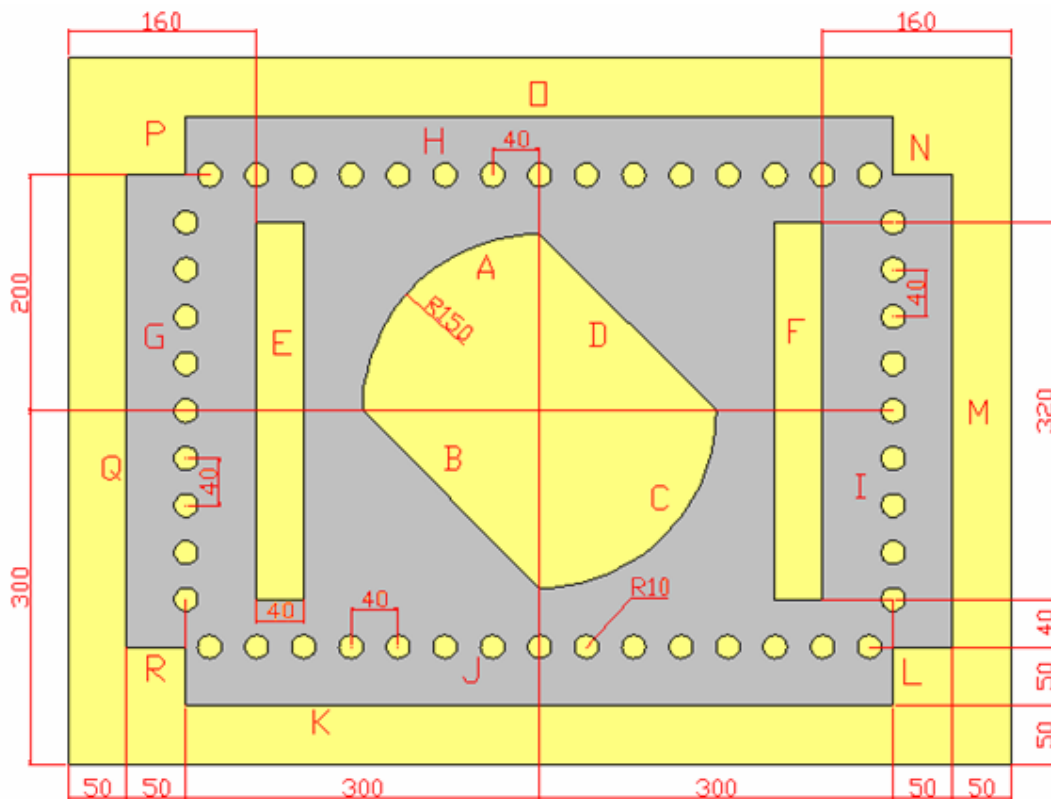


Figure 2: Base plate bracket

(35 marks)

Question 3

The G –Code program that you write must follow the sequence number. You are given the following tools;

- a) Round tool diameter 20 mm T 18
- b) Square tool 10 x 10 mm T 12.
- c) Square tool 20 x 20 mm T 13.
- d) Rectangle tool 30 x 3mm T5; (Auto-index)

From the above information, write a G-Code program for the drawing below;

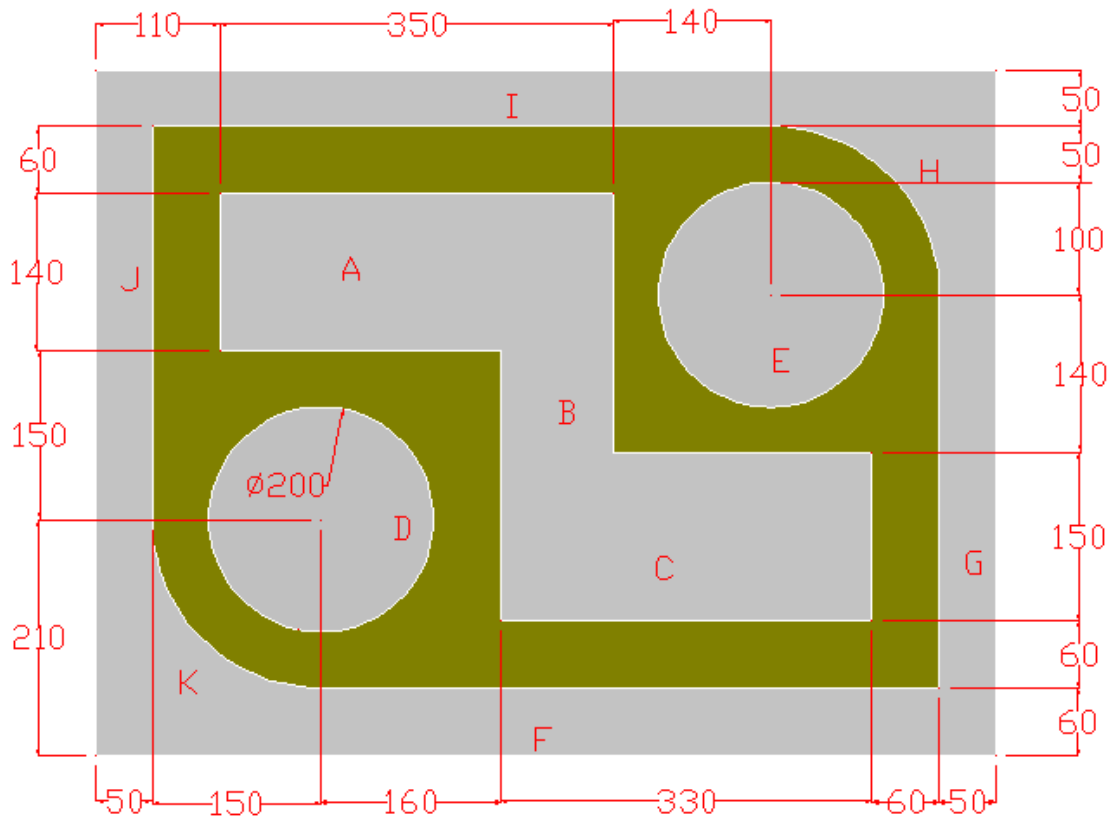


Figure 3: Base plate bracket

(35 marks)

END OF QUESTION