



2014 – 2015

Max.Mark:100%

Q1-A: The contour in Fig. 1 , of depth of 4mm with surface finishing of $R_a = 3.2\mu m$, so:

(1) Select the optimal operating conditions from table (1), for this job by using carbide end mill, the raw material is Low carbon-steel with dimensions 80mmx70mmx10mm.

(2) Calculate the revolutions of tool (RPM).

(3) Write CNC program for machining this contour.

Hint:

N01 G90 G80 T00;

N02 G00 X.... Y..... Z.....;

N03 M03 S.....;

N04 X... Y.... Z.....;

N05 Z....; N06 G01 Z.... F....; N... cont. (17 marks)

Q1-B: Write the number and right character for die shown in Fig. 2 (8 marks)

- a - Die
- b - Die holder
- c - Guide
- d - punch
- e - Guide bush
- f - shank
- g - spring
- h - punch holder
- i - bending
- j - drawing
- k - extrusion
- l - cutting

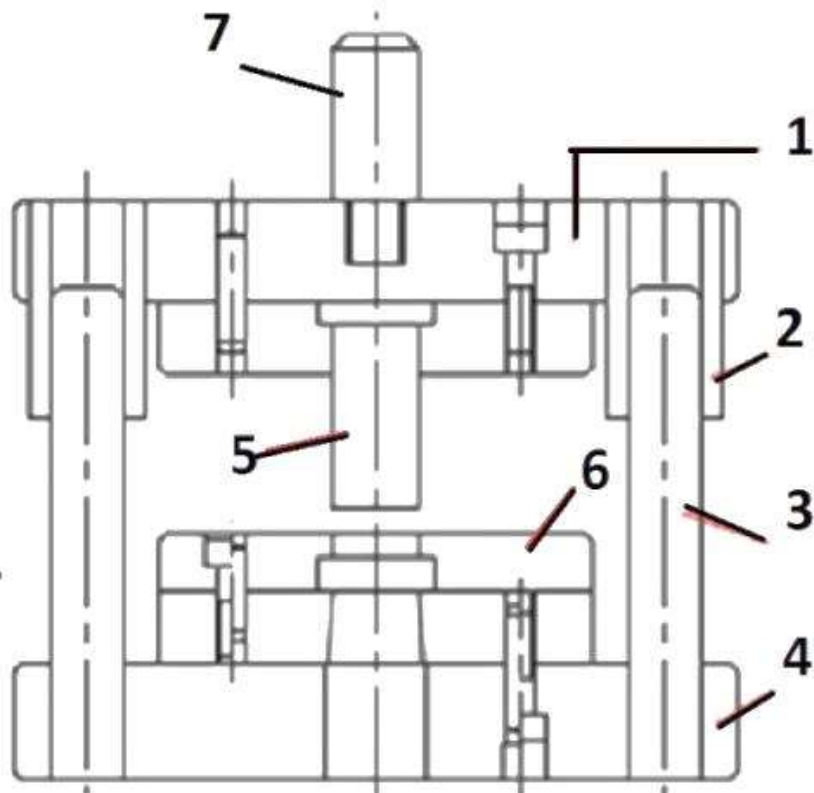


Fig (2) Die for 8

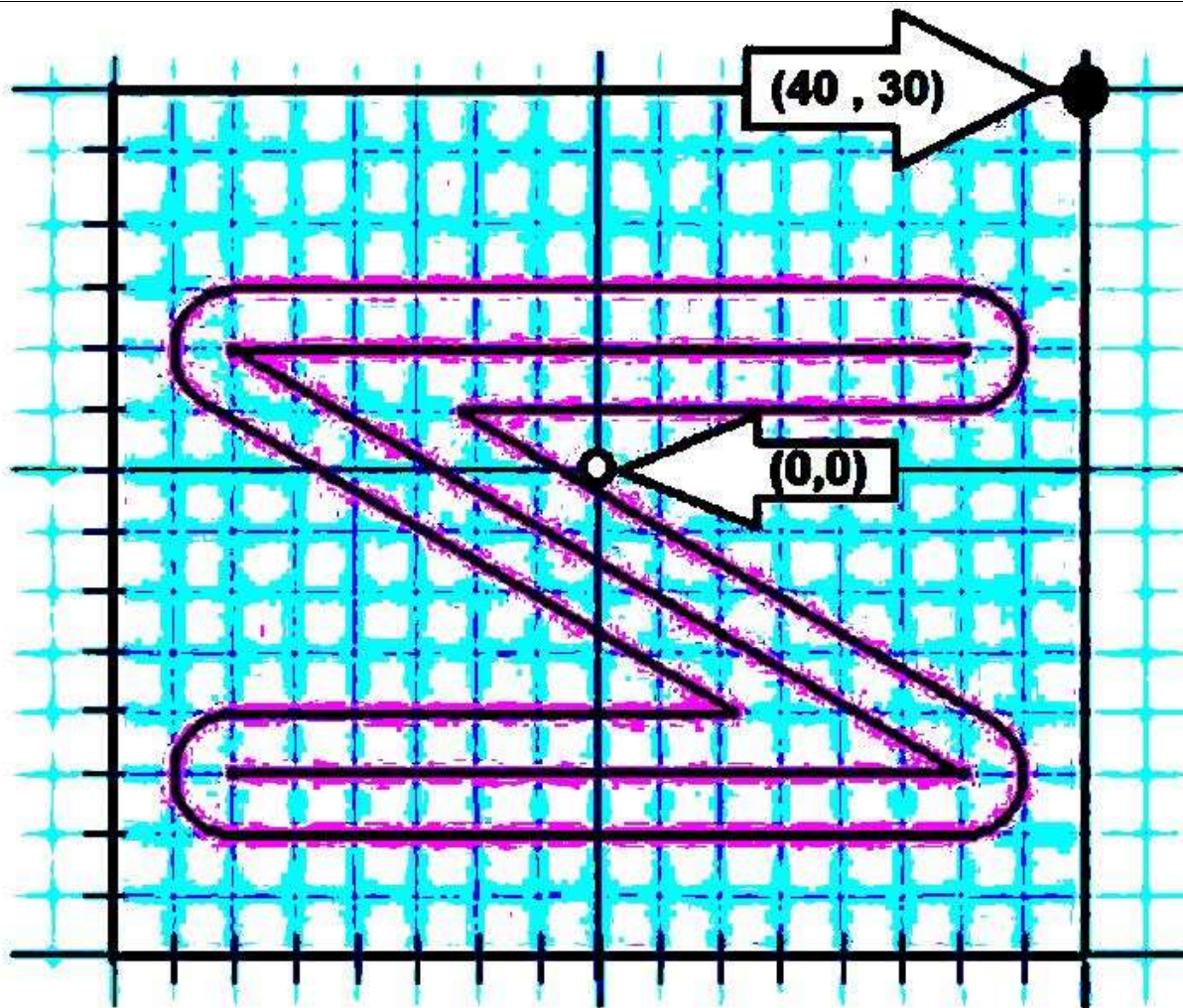


Fig. 1

Q2-A: Figure 3 shows the detail drawing of a finished steel rod, so:

- (1) Sketch the detail drawing of semi-finished material (blank of casting) suitable for production of 1000 pcs daily .
- (2) Sketch the technical operations sequence for this blank.

HINT: estimate the optimal operating conditions and all technical data for machining from table 1. (17 marks)

Q2-B: Write the number and right character as shown in Fig. 4 (8 mark)

