Total No. of Questions : 10]

P1303

SEAT No. :

[Total No. of Pages : 3

[4858] - 1020

T.E. (Mechanical) (Semester - II)

MANUFACTURING PROCESS - II (End Sem.)

(2012 Pattern)

Time :2.30 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q. 8, Q.9 or Q.10.***
2) ***Figures to the right indicate full marks.***
3) ***Use of electronic pocket calculator is allowed.***
4) ***Assume suitable data, if necessary.***

Q1) a) Differentiate between Honing and Lapping process. **[6]**

b) Calculate the Index Crank movement for 69 divisions by compound indexing methods. **[6]**

Hole circles are,

Plate I : 15, 16, 17, 18, 19, 20

Plate II : 21, 23, 27, 29, 31, 33

Plate III : 37, 39, 41, 43, 47, 49

OR

Q2) a) Sketch and Explain following drilling operations: **[6]**

i) Countersinking

ii) Trepanning

iii) Spot facing

b) Explain the meaning of each letter mentioned on the following grinding wheel. **[6]**

"W-C-10-E-5-V-17"

P.T.O.

Q3) a) Draw the Merchant's circle of forces and explain the different quantities involved. **[4]**

b) A tool life of 60 minute is obtained at a speed of 25 m/min and 6 minute at 50 m/min. Calculate the following **[4]**

i) Tool life equation.

ii) Cutting speed for 4 minute tool life.

OR

Q4) a) Draw neat sketch of single point cutting tool geometry. **[4]**

b) Explain different types of chips. **[4]**

Q5) a) Explain ECM process with its adv., limitations and applications. **[8]**

b) Explain AJM process with its adv., limitations and applications. **[8]**

OR

Q6) a) Draw a Schematic diagram of 'Electro-discharge Machining' and Explain its working principle and process parameters. **[8]**

b) Explain USM process with its advantages, limitations and applications. **[8]**

Q7) a) Explain CNC machines with neat sketch. State its advantages and limitations. **[6]**

b) Explain meaning of 2 axis, 3axis, 5 axis CNC machines. **[3]**

c) Write a part program for component shown in fig. Assume that spindle speed of 400 rpm and feed is 0.3mm/rev. **[7]**

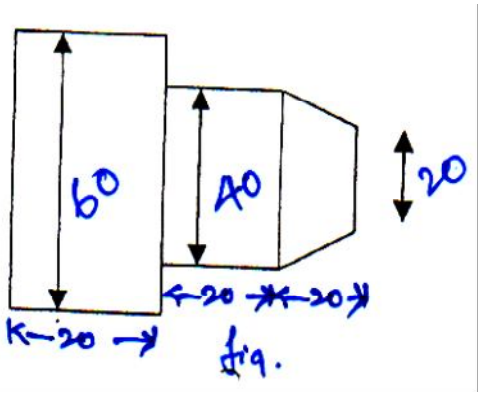

fig.

OR

Q8) a) Draw block diagram of DNC system and compare DNC and CNC system. **[8]**

b) Differentiate between open loop and close loop system. **[4]**

c) Explain the following codes **[4]**

G03, M30, G90, M08

Q9) a) Define Jig and Fixture. Differentiate between them with suitable examples. **[5]**

b) Write short notes on modular fixture. **[5]**

c) Design and draw drilling jig for drilling the ϕ10 mm holes in the component shown in fig. (a) **[8]**

OR

Q10)a) List various types of locating devices used in jig and fixtures. Explain any one in detail **[6]**

b) Draw and Explain Diamond pin locators. **[4]**

c) Design and draw milling fixture for milling slot of 10 mm wide, 10 mm deep and 20 mm in length for the component shown in fig. (a) **[8]**

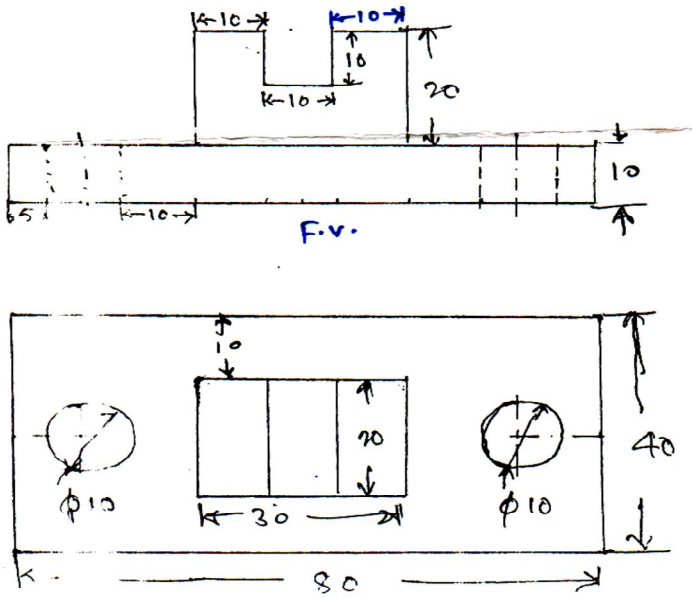

fig. (a) T.V.