Total No. of Questions : 10]

SEAT No. :

P 3257

[Total No. of Pages : 3

[5353] - 120

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

MANUFACTURING PROCESS - II

(2012 Pattern)

Time : 2½ 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) Draw a neat sketch of twist drill with its nomenclature and explain various terminologies of twist drill. **[6]**

b) A hole of 25mm diameter and 70mm depth is to be drilled. The suggested feed 1.3 mm/rev. and cutting speed 60m/min. assuming tool approach and tool overtravel as 6mm, Calculate : **[6]**

1) Spindle speed 2) Feed Speed 3) Cutting Speed.

OR

Q2) a) Describe the Tool and Cutter grinder with neat sketch. **[6]**

b) Write short notes on Burnishing Process. **[6]**

Q3) a) In orthogonal cutting of a 60mm diameter MS bar on lathe, the following data was obtained: **[4]**

Rake angle = 10°, Cutting Speed = 100 m/min, Cutting force = 200N,

Feed Force = 70N, Chip thickness = 0.3 mm, feed = 0.2 mm/rev.

Calculate: 1) Shear angle, 2) Coefficient of friction, 3) Chip flow Velocity, 4) Friction Angle

b) Explain chip breakers with its function? **[4]**

OR

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Q4) a) With the help of neat sketch explain the relation between shear velocity, cutting velocity and chip flow velocity. **[4]**

b) What is Machinability? Explain different factors affecting Machinability. **[4]**

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

b) Compare the ECM and EDM with various process parameters. **[8]**

OR

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

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

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

b) Explain with neat sketch NC motion control system. **[5]**

c) Explain the following codes **[5]**

G02,G91,G98, M03,M02

OR

Q8) a) Explain machining center with neat sketch. State its advantages, disadvantages and applications. **[6]**

b) Differentiate between open and close loop system with neat sketch. **[6]**

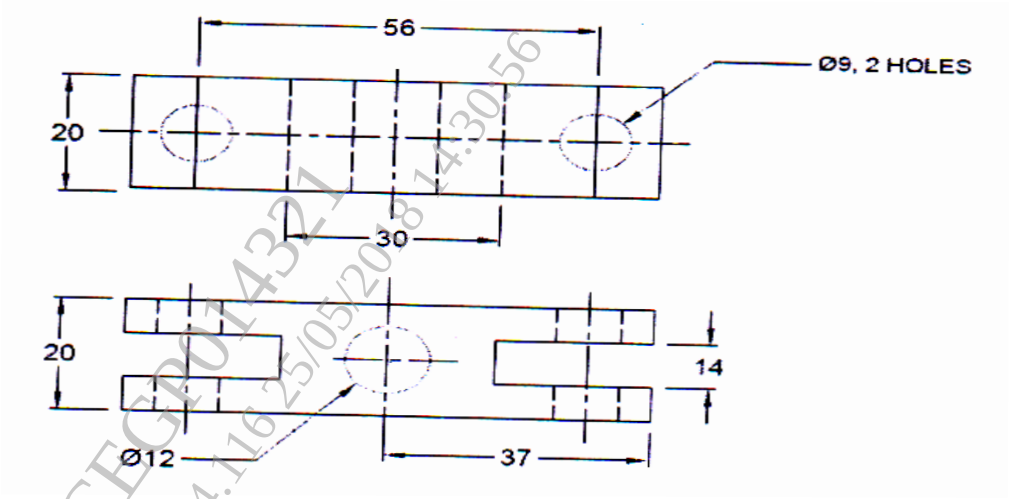
c) Explain the following codes **[4]**

G03, M00, G91, M08

Q9) a) What is 3 - 2 - l location principle? Explain with neat sketches. **[6]**

b) Draw and explain diamond pin locator. **[4]**

c) Design and draw drilling jig for drilling the ϕ9 mm TWO holes in the component Shown in figure. **[8]**

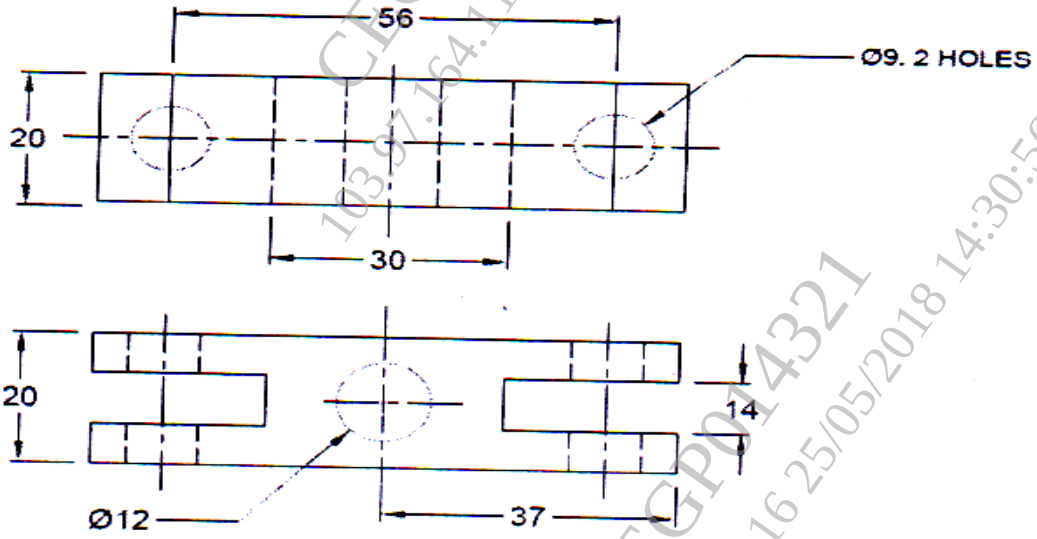


OR

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

b) Write short notes on modular fixture. **[4]**

c) Design and draw milling fixture for milling 74mm × 20mm face **[8]**



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