Total No. of Questions : 10]

SEAT No. :

P1702

[Total No. of Pages : 3

[5460]-520
T.E. (Mechanical)
MANUFACTURING PROCESS - II
(2015 Pattern) (Semester - II)

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 right indicate full marks.***
3) ***Use of electronic pocket calculator is allowed.***
4) ***Assume suitable data if necessary.***

Q1) a) Explain different types of chips in metal cutting operation with neat sketches. **[6]**

b) The tool life of cutting tool obtain was 40 min and 25 min at cutting speed of 80 m/min and 100 m/min respectively. Determine the tool life 40 m/min and 120 m/min. **[6]**

OR

Q2) a) Index 69 divisions by using compound indexing methods. **[6]**

b) Explain radial drilling machine with neat sketch. **[6]**

Q3) a) Explain loading, glazing, truing and dressing in grinding operation. **[4]**

b) Calculate machining time required to produce 10 holes on 40 mm plate with following data. Cutting speed: 25 m/min, feed: 0.1 mm/rev, Drill Diameter : 30 mm, overrun: 15 mm. **[4]**

OR

Q4) a) Write short notes on honing process. **[4]**

b) Draw and explain broach tool geometry. **[4]**

P.T.O.

Q5) a) What is EDM? Explain EDM process with its advantages, limitations and applications. **[8]**

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

OR

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

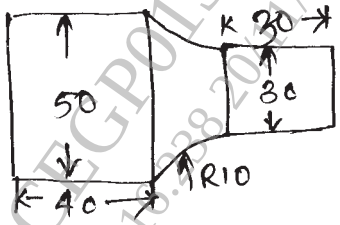
b) Write short note on micromachining. **[4]**

c) Compare process parameter of AJM and ECM. **[4]**

Q7) a) Explain DNC machines with neat sketch. State its advantages and limitations. **[5]**

b) Explain with neat sketch open and closed loop system. **[4]**

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



OR

Q8) a) Explain automatic pallet changer with neat sketch. State its advantages, disadvantages and applications. **[6]**

b) Explain the advantages and limitations of numerical control of machine tool. **[6]**

c) Explain the following codes : **[4]**
G04, M04, G28, G17.

Q9) a) Explain box type of jig with neat sketch. **[6]**

b) Explain concept of Poka yoke in jig and fixture. **[4]**

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 clamping devices used in jig and fixtures. Explain any one in detail. **[5]**

b) List different types of drill bushes. Explain any one with neat sketch. **[5]**

c) Design and draw milling fixture for milling slot of 10 mm wide, 5 mm deep and 25 mm in length for the component shown in fig. (a). **[8]**

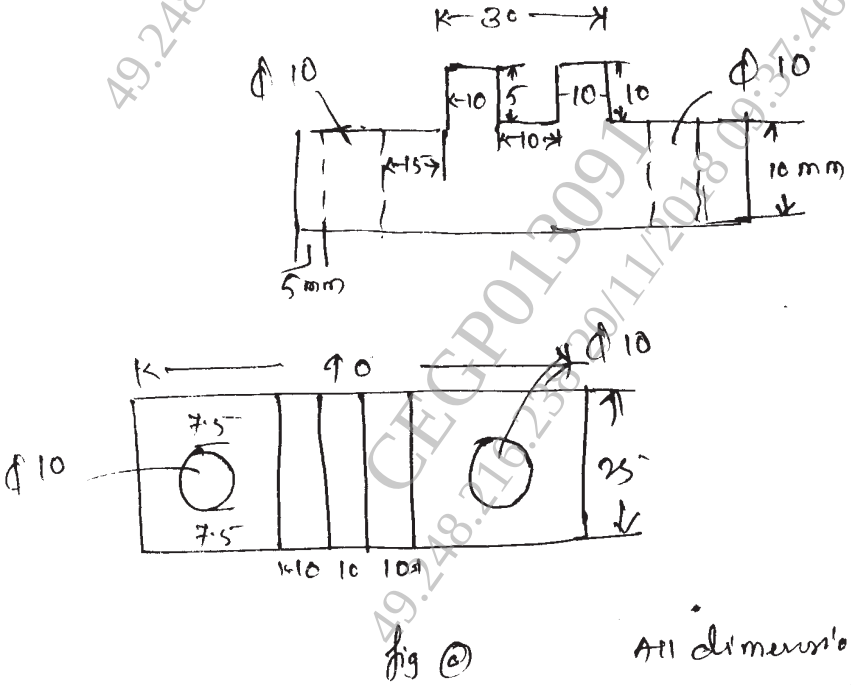


fig (a)

All dimensions are in mm

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