

PART B — (5 × 16 = 80 marks)

11. (a) (i) Illustrate the working of a vertical toggle clamp.
(ii) Illustrate the working of air-hydraulic Booster circuit for clamping operation.

Or

- (b) Locate and clamp the work-piece shown in Fig 11 (b). The work piece should be positioned to allow the slot to be machined on a horizontal milling machine using a staggered-tooth side-milling cutter.

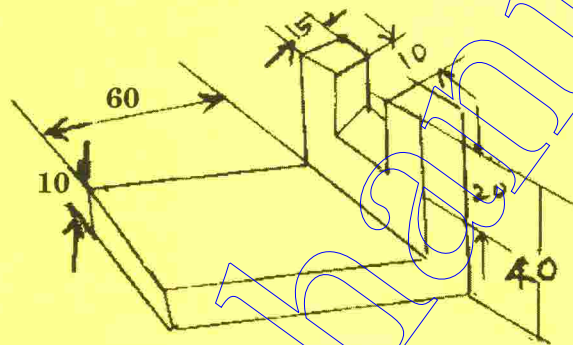


Fig. 11 (b)

12. (a) Design and draw any two views of an Indexing drill jig to drill the four 6mm holes in the gland shown in Fig 12 (a).

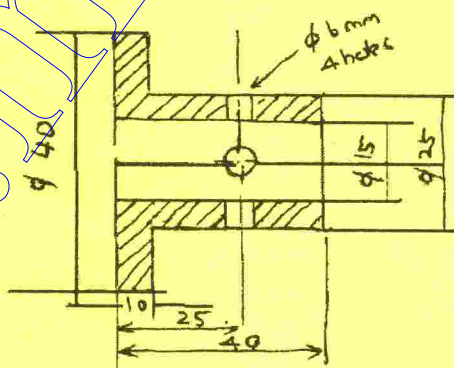


Fig. 12 (a)

Or

- (b) Design and draw any two views of a box jig to drill the 9mm two holes and one 12mm hole for the component shown in Fig. 12 (b).

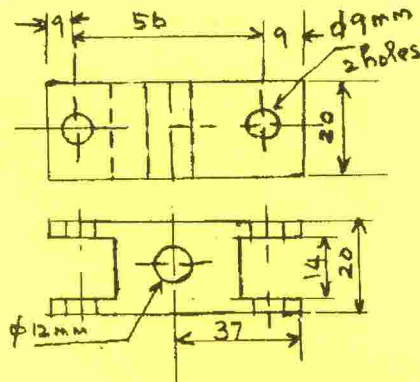


Fig. 12 (b)

13. (a) Locate and clamp and draw two views of Faceplate fixture for in line boring of 10mm holes for the component Shown in Fig 13 (a).

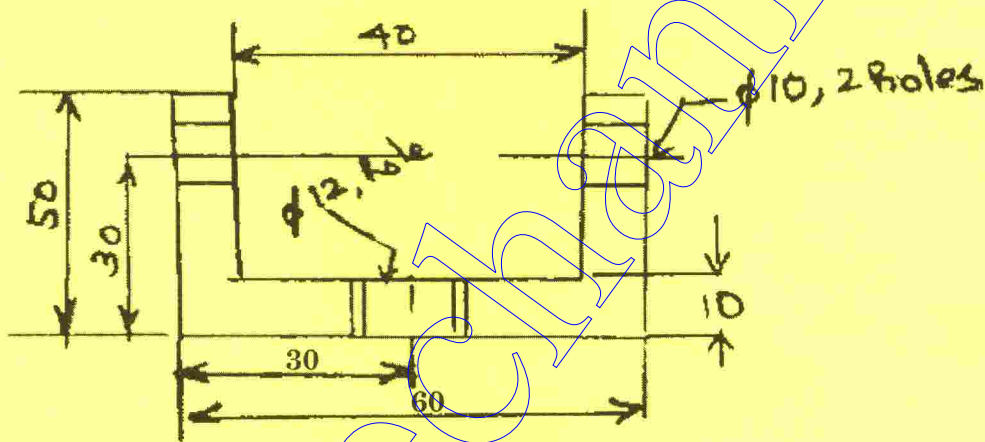


Fig. 13 (a)

Or

- (b) Draw any two views of Milling Fixture to mill the vertical faces of the component shown in Fig 13 (a).
14. (a) With proper sketch explain the following terms of a die-set
- (i) Die block
 - (ii) Die shoe
 - (iii) Bolster plate
 - (iv) Punch plate
 - (v) Punch holder
 - (vi) Pilots
 - (vii) Strippers and
 - (viii) Knockout.

Or

- (b) Calculate the economic strip layout, press tonnage, centre of pressure and select the standard die-set for the component shown in Fig. 14 (b).

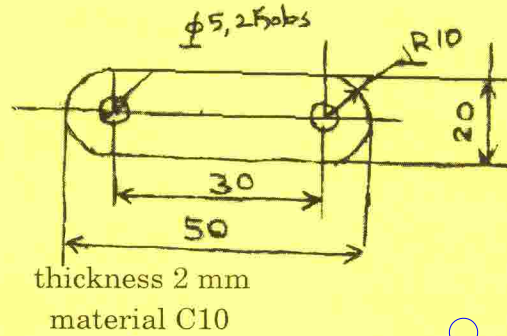


Fig. 14 (b)

15. (a) Design and draw the front view of a combination die for the component shown in Fig. 15 (a).

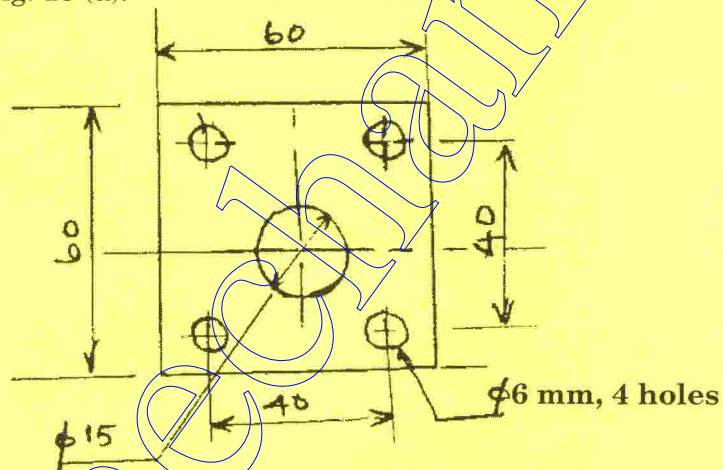


Fig. 15 (a)

Or

- (b) Design and draw the front view of a single action drawing die with spring loaded knockout for the component shown in Fig. 15 (b).

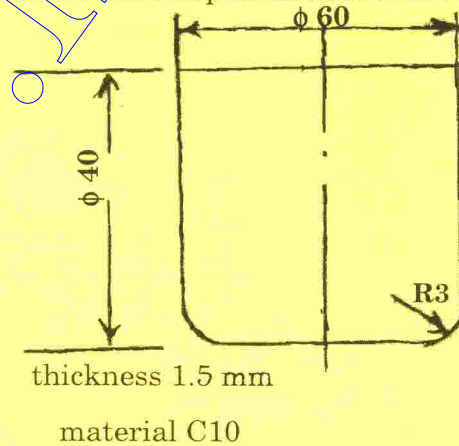


Fig. 15 (b)