① Tool holder (1 No.—C.I.)

② Spring (1 No.—Steel)

③ Clamping nut (1 No.—M.S.)

④ Stud (1 No.—M.S.)

⑤ Handle (1 No.—M.S.)

⑥ Base plate (1 No.—C.I.)

⑦ Knob (1 No.—Ebonite)

⑧ Ball (1 No.—Steel)

⑨ Screw (8 Nos.—M.S.)

Fig.3
Lathe tool post (multiple tool) parts

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AU/IP/ME - 305
B.E. III Semester
Examination, Decemeber 2013
Machine Drawing And Design

Time : Four Hours

www.rgpvonline.in   *Maximum Marks : 70*

Note: Attempt one question from each unit. The question from Unit-II carry double weightage. Assume suitable missing/ misprint data, if any.

Unit - I

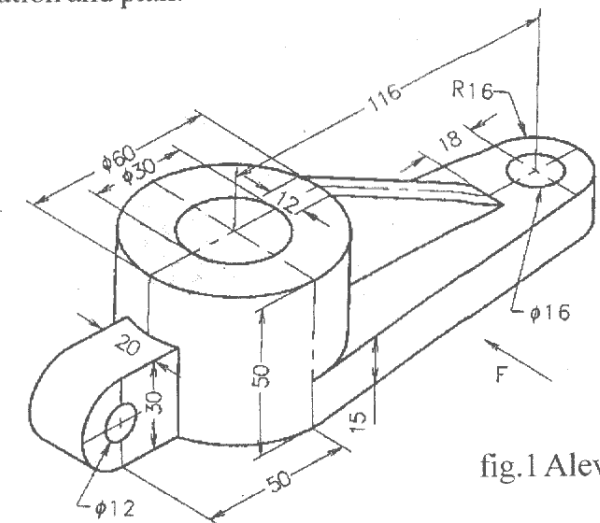1. Isometric view of a lever is shown in fig.1. Draw sectional elevation and plan.

fig.1 Alever

OR

2. a) Sketch the following welding symbols

   i) Square butt weld   ii) Fillet weld
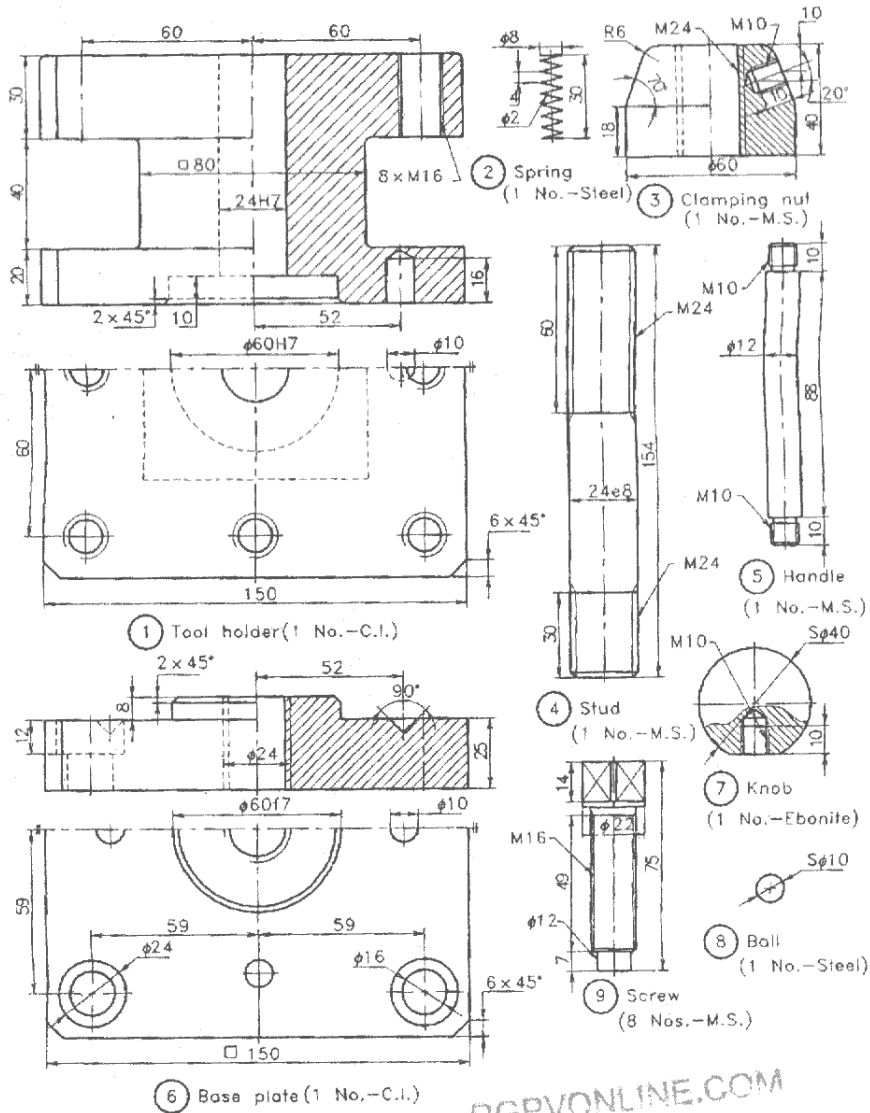
   iii) Plug weld   www.rgpvonline.in

b) Draw double riveted chain lap joint of 18 mm thick plate using snap headed rivets. Show atleast three rivets in the plan and add a sectional view.

Unit - II

3. The part details of a socket and spigot joint are given in fig.2. Assemble them and draw

a) Elevation top half in section

b) Plan

c) Side view from right

OR

4. The parts of a Lathe tool post (multiple tool) are given in figure 3. Assemble the parts and draw

a) Full sectional front view

b) Plan of the tool post

Unit - III

5. a) What do you mean by engineering design. Explain with example.

b) What do you mean by standardization. What is it's importance in machine design.

OR

6. a) What is computer Aided Drafting. Explain five edit commands used in drafting. www.rgpvonline.in

b) What is factor of safety. Explain its importance in design.

Unit - IV

7. Design a cotter joint to connect two mild steel rods. The joint is subjected to a 20KN tensile face. The allowable limits of tensile shear and crushing strengths are 60N/mm², 40N/mm² and 75N/mm² respectively.

OR

8. A triple riveted lap joint is to be made between 6.5mm thick plates. Permissible values of stresses for plate and rivets are $\sigma_t = 40MPa$, $\sigma_s = 25MPa$, $\sigma_c = 55MPa$ Using Zig-zag riveting, design joint and show dimensions on a sketch.
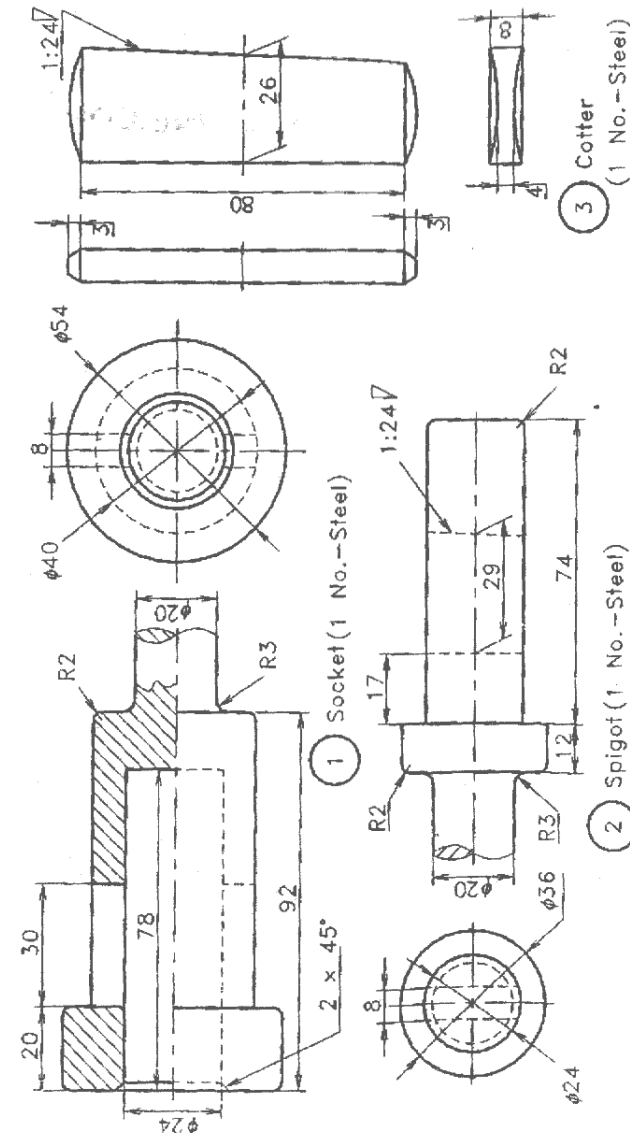

fig.2

Socket and spigot joint (parts)