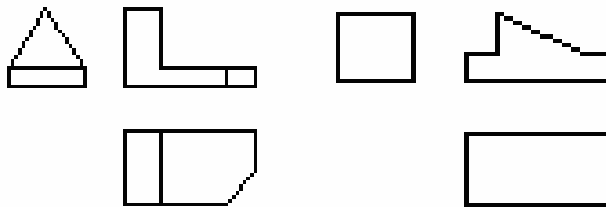


GUJARAT TECHNOLOGICAL UNIVERSITY**B.E. Sem-III Regular / Remedial Examination December 2010****Subject code: 132001****Subject Name: Industrial Drafting****Date: 16 /12 /2010****Time: 10.30 am – 01.30 pm****Total Marks: 70****Instructions:**

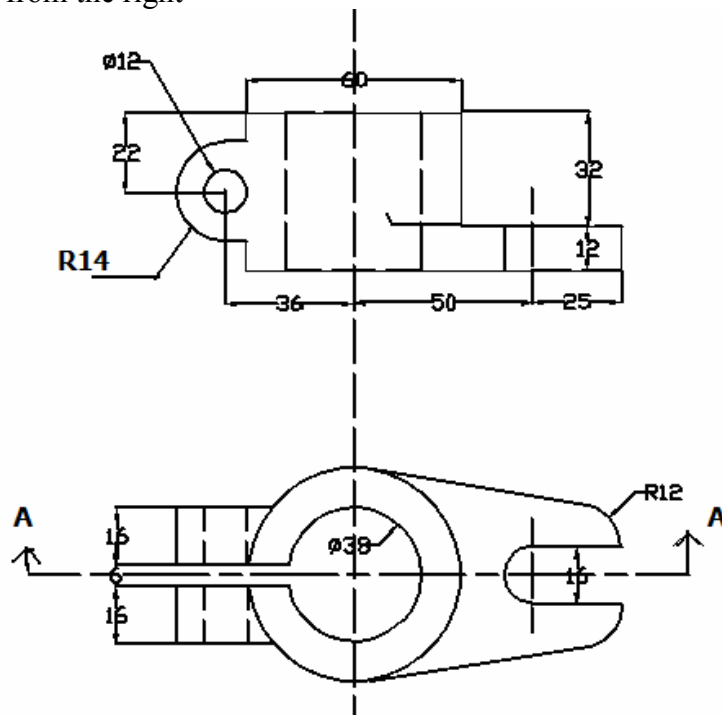
1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 (a)** Enlist various locking arrangement of nuts. Explain any two of them in detail with rough sketch. **07**
- (b)** Draw missing line or lines, full or dotted, in the orthographic views of the objects shown in Figure below. The answer must be supported by the rough sketch of an isometric view of the objects, without which no credit will be given for the answer. **07**



- Q.2 (a)** Draw according to the first-angle projection method: **07**

1. Sectional front view, along section A-A
2. Top view
3. Side view from the right



- (b) A vertical square prism, base 50 mm side is completely penetrated by a horizontal square prism, base 35 mm side so that their axes are 6 mm apart. The axis of the horizontal prism is parallel to the V.P., while the faces of both prisms are equally inclined to the V.P. Draw the projections of the prisms showing lines of intersections. **07**

OR

- (b) A vertical cylinder of 60 mm diameter is penetrated by a horizontal square prism, base 40 mm side, the axis of which is parallel to the V.P. and 10 mm away from the axis of the cylinder. A face of the prism makes an angle of 30° with the H.P. Draw their projections, showing curves of intersection. **07**

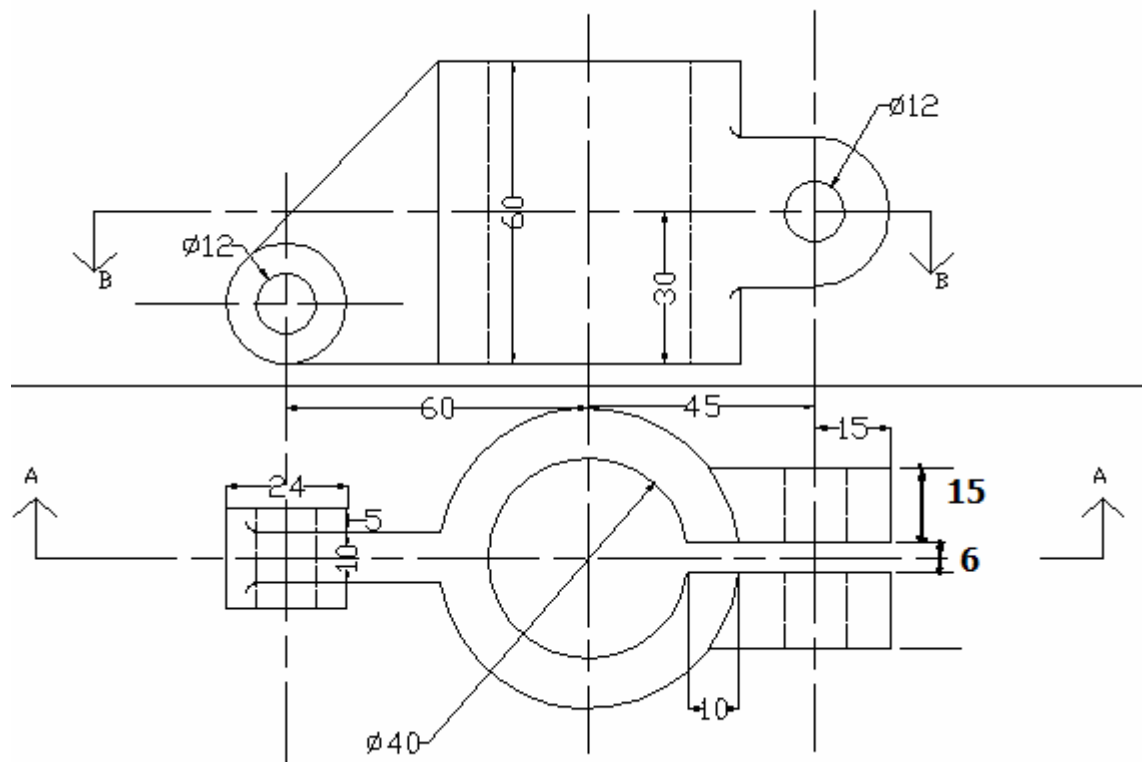
- Q.3 (a)** Explain the need of the foundation bolt. Enlist various types of foundation bolt. Explain any one of them with rough sketch. **07**

- (b) 1. Draw three views of a hexagonal nut M12 by rough rule dimensions. **04**
2. Write down the applications of the wing nut, cap nut and stud. **03**

OR

- Q.3 (a)** Explain the function the cheese headed bolt and T-headed bolt with rough sketch. **07**

- (b) Draw according to the first-angle projection method:
1. Sectional front view, along section A-A **07**
2. Sectional top view, along section B-B



- Q.4 (a)** 1. Draw the free hand sketch for the conventional representation of wood, glass, lead (as a metal) and porcelain (as an insulator). **04**
2. Draw the free hand sketch for the conventional representation of square on shaft, bevel gear and interrupted views. **03**
- (b) Prepare a neat sketch, in two views, of a sleeve cotter joint for two 25 mm diameter rods. **07**

OR

- Q.4 (a)** Explain with the aid of sketches, the use of **07**
1. Flat saddle key
 2. Spline shaft

- (b)** Prepare a dimensioned sketch, of a knuckle joint for two 40 mm diameter rods. **07**

- Q.5 (a)** 1. Mention three methods of placing limit dimensions. **03**

2. Define fit. Explain various types of fits. **04**

- (b)** 1. Calculate the fundamental tolerance for a shaft of 90 mm and grade 10. **03**

Use geometrical mean $D=100$ mm and following table:

Grade	IT7	IT8	IT9	IT10	IT11	IT12
Tolerance Value	16i	25i	40i	64i	100i	160i

2. Explain the hole basis and shaft basis systems. **04**

OR

- Q.5 (a)** Enlist the various commands available in modify tool box of AUTO CAD. Explain any two of them by giving suitable example. **07**

- (b)** Make a list of commands used step by step in context of AUTO CAD to drawing the following figure. **07**

