Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

BE SEM-III Examination May 2012

Subject code: 132001

Subject Name: Industrial Drafting

Date: 10/05/2012 **Time: 02.30 pm – 05.30 pm**

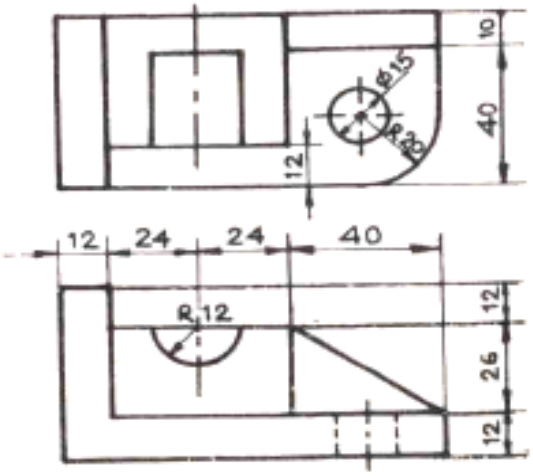
Total Marks: 70

Instructions:

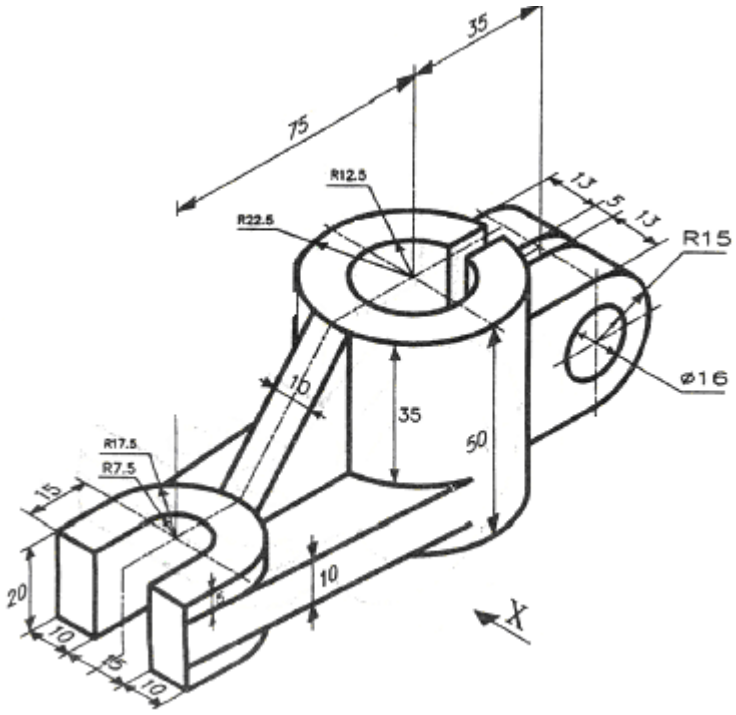
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1 **(a)** What are the standard sizes of drawing sheets? What are the standard procedures for folding of drawing sheets of standard sizes? **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 the following view of the given figure by using first angle projection method (i) Sectional Front View (ii) Top View(iii) Left Hand Side View **07**



(b) A vertical cylinder of 65 mm diameter is penetrated by a horizontal square prism, base 40 mm side, the axis of which is parallel to the V.P. and 15 mm away from the axis of the cylinder. A face of the prism makes an angle of 30^0 with the H.P. Draw their projections, showing curves of intersection. **07**

OR

(b) A vertical square prism, base 60 mm side is completely penetrated by a horizontal square prism, base 40 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**

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) Draw dimensioned sketches of the following forms of screw threads: **07**

1. Acme thread
2. Square thread

OR

Q.3 **(a)** Draw the three views of a hexagonal-headed bolt, 20 mm diameter and 90 mm long, with a hexagonal nut and a washer. **07**

(b) Draw neat sketches of Castle nut and Ring nut. **07**

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). **07**

2. Draw the free hand sketch for the conventional representation of square on shaft, bevel gear and interrupted views

.

(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

Q.4 **(b)** Prepare a dimensioned sketch, in two views, of a socket and spigot joint for two 20 mm diameter rod. **07**

Q.5 **(a)** 1. Mention three methods of placing limit dimensions. **07**

2. Define fit. Explain various types of fits.

(b) 1. Calculate the fundamental tolerance for a shaft of 90 mm and grade 10. **07**
Use geometrical mean D=100 mm and following table:

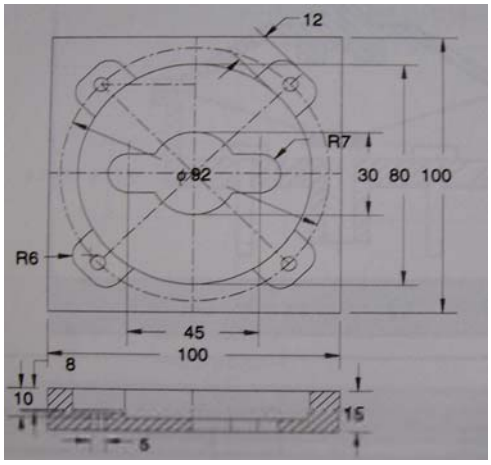
Grade	IT7	IT8	IT9	IT10	IT11	IT12
Tolerance Value	16i	25i	40i	64i	100i	160i

2. Explain the hole basis and shaft basis systems.

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 for drawing the following figure using Auto-CAD. **07**


12
R7
ø82
30
80
100
R6
45
100
8
10
15
5