Roll No. $\square$ Total No. of Pages : 05
Total No. of Questions: 09

# B.Tech.(AE) (2011 Onwards) (Sem.-3) <br> MACHINE DRAWING <br> Subject Code : BTAE-306 <br> Paper ID : [A1156] 

Time: 3 Hrs.
Max. Marks : 60

## INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and student has to attempt any TWO questions.

## SECTION-A

Q1. Write briefly :
a. list out the various types of assembly drawings.
b. List out the various principles to be followed while dimensioning a drawing.
c. What type of thread is used for the screw jack and lathe lead screw and why?
d. Why are the annular recesses provided at the side of flanges in a protected flange coupling?
e. What is the purpose of providing an expansion joint in the pipe line, carrying hot fluids?
f. How riveted joints are made air-tight?
g. By what means, the location of a weld is specified?
h. What is a snug? What is the function of it in the bearing?
i. What is an unilateral tolerance and a bilateral tolerance?
j. What is the function of friction clutch?

## SECTION-B

Q2. The dimensions of a shaft and a hole are given below: Shaft, Basic size $=60 \mathrm{~mm}$ and given as $60-0.020$ Hole, Basic size $=60 \mathrm{~mm}$ and given as $60-0.005$ Find out :
a. Tolerance of shaft
b. Tolerance of hole
c. Maximum allowance
d. Minimum allowance
e. Type of fit

Q3. Sketch the conventional representation of the following materials :
a. bronze.
b. cast iron.
c. concrete.
d. wood.
e. white metal.

Q4. Draw (i) sectional view from the front, (ii) the view from above and (iii) the view from the right of the vice body shown in Fig. 1.


Fig. 1

Q5. Draw the three views of a hexagonal headed bolt of nominal diameter 25 mm and length 100 mm ; with a hexagonal nut and washer.

Q6. Draw the orthographic projections of flange coupling with suitable diameter of shaft. Assembly is shown in Fig.2.


Fig. 2

## SECTION-C

Q7. Draw (a) sectional view from the front and (b) view from above, of the double riveted, double strap, chain butt joint, to join plates of thickness 10 mm .

Q8. Draw the assembly of Plummer block shown in Fig. 3.


Fig. 3

Q9. Draw the assembly of screw jack shown in Fig. 4.

Parts list

| Part No. | Name | Mall | Qty. |
| :---: | :--- | :--- | :---: |
| 1 | Body | Cl | 1 |
| 2 | Nut | GM | 1 |
| 3 | Screw | MS | 1 |
| 4 | Cup | CS | 1 |
| 5 | Washer | MS | 1 |
| 6 | Screw | MS | 1 |
| 7 | Tommy bar | MS | 1 |

Fig. 4

