

**Diploma in Electrical and Mechanical  
Engineering**

**Term-End Examination**

**June, 2007**

**BME-034 : MACHINE DRAWING**

*Time : 2 hours*

*Maximum Marks : 70*

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**Note :** Answer *all* questions.

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1. Answer any **seven** of the following questions : 7×2=14
- (a) Name two types of drawing.
  - (b) What views are normally drawn in orthogonal projection of an object ?
  - (c) The root angles in BIS metric thread and BSW threads are respectively \_\_\_\_\_ and \_\_\_\_\_ .
  - (d) Choose correct answer out of the four choices. The pitch (p) and depth (h) of an Acme thread are related as
    - (i)  $p = 2h + 0.25 \text{ mm}$
    - (ii)  $p = 2h + 0.5 \text{ mm}$
    - (iii)  $p = 2h - 0.25 \text{ mm}$
    - (iv)  $p = 2h - 0.5 \text{ mm}$

- (e) In a nut and bolt combination, the thickness of the nut is  $t_n$  and thickness of the bolt head is  $t_h$ . Choose the correct answer.
- (i)  $t_n = t_h$
  - (ii)  $t_n > t_h$
  - (iii)  $t_n < t_h$
- (f) Name two head forms of rivets.
- (g) The shortest height of head is carried by \_\_\_\_\_ head form and it is equal to \_\_\_\_\_ times the diameter of the rivet shank.
- (h) Name one part which is fitted on shaft with the help of a key and other part which is fitted on shaft without the help of a key.
- (i) Which key makes deepest groove and which makes no groove in the shaft ?

2. Two steel plates, each 12 mm thick are jointed by a single riveted lap joint. Draw two views to full size. Show 4 rivets and section line in plan. 20

**OR**

Two steel plates, each 30 mm thick, are jointed by an M 20 bolt and nut. Show two views of the joint.

3. Figure 1 shows 5 components of a knuckle joint. Assemble the parts and draw front elevation in section and side view in full.

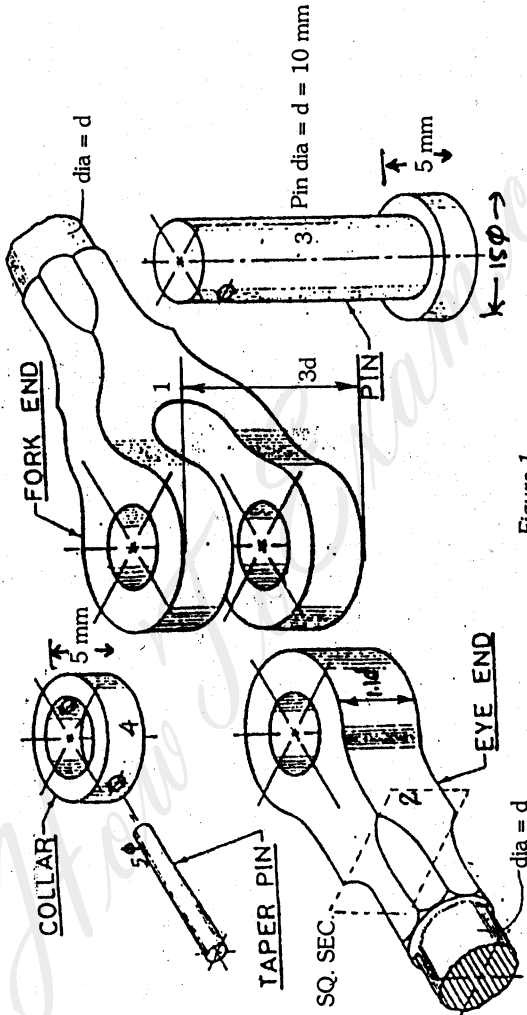


Figure 1

OR

Figure 2 shows flanges, keys and shafts to be connected in a flange coupling. Assemble and draw elevation and side view in full. Note that nuts and bolts are to be added.

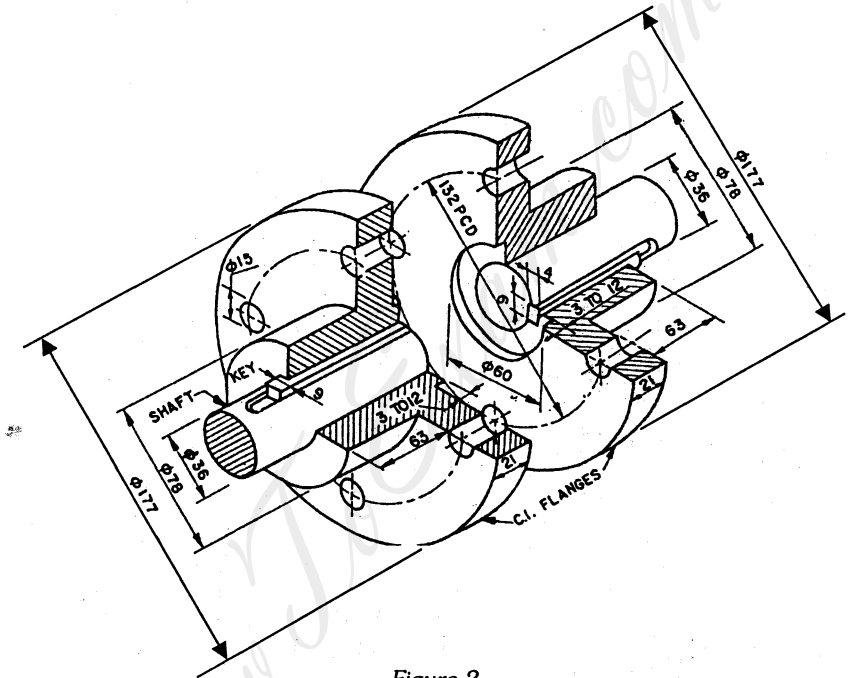


Figure 2