

Scheme – G

Sample Question Paper

Course Name : Mechanical Engineering Group

Course Code : AE/ME/MH/PT/PG/MI

Semester : Third

Subject Title : Mechanical Engineering Drawing

Marks : 100

17305

Time: 4 Hr.

Instructions:

1. All questions are compulsory
2. Illustrate your answers with neat sketches wherever necessary
3. Figures to the right indicate full marks
4. Assume suitable data if necessary
5. Preferably, write the answers in sequential order

Q.1 A) Draw conventional representation for any SIX of the following:

12 Marks

- a) Conventional break for 'I' section.
- b) Antifriction Bearing
- c) Splined Shaft
- d) Spring with flatend
- e) Spur gear
- f) Bevel gear
- g) Globe valve
- h) Internal screw thread

Q.1 B) Attempt any TWO of the following:

08 Marks

- a) Draw the symbols for the following
 - i. Fillet weld
 - ii. Spot weld
 - iii. Seam weld
 - iv. Square butt weld
- b) The shaft has size $\phi 35^{0.04}$ and hole size is $\phi 35^{0.00}$. Determine the type of fit between them
- c) State the meaning of the symbol shown in Fig. 1..

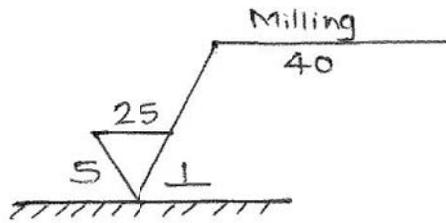


Fig. 1

Q.2 a) Fig 2 shows F.V. and partial left hand side view and auxiliary view of an object.
Complete the left hand side view. (Use first angle method of projection) (12 Marks)

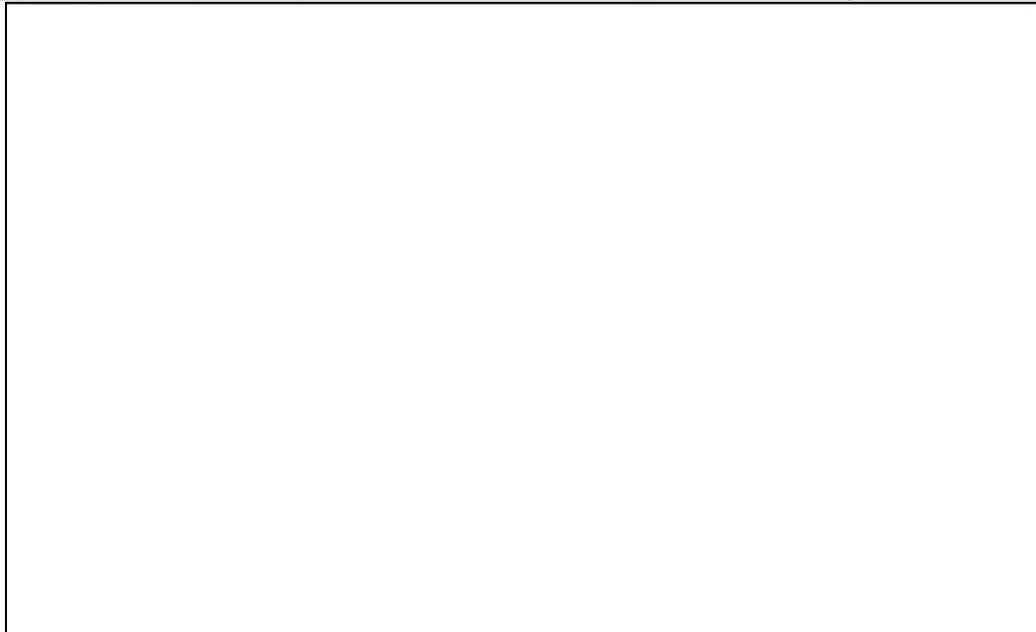
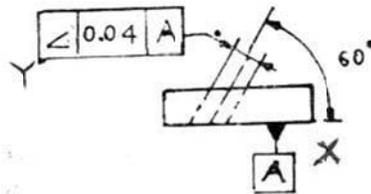


Fig. 2

Q.2 b) Attempt any TWO of the following

(08 Marks)

a) Refer fig. 3. What is the meaning of symbols at 'x' and 'y'?



1. Fig. 3

b) Two rectangular plates are to be welded with each other along the length. The thickness and length of both the plates is 10 mm and 50 mm respectively. The plates are to be 'u' butt welded with convex counter. Prepare welding drawing.

c) Draw the symbols for following features which are controlled in geometrical tolerancing

a) Straightness

b) Circularity

c) Angularity

d) Profile of any line.

Q.3 Attempt any TWO of the following

(20 Marks)

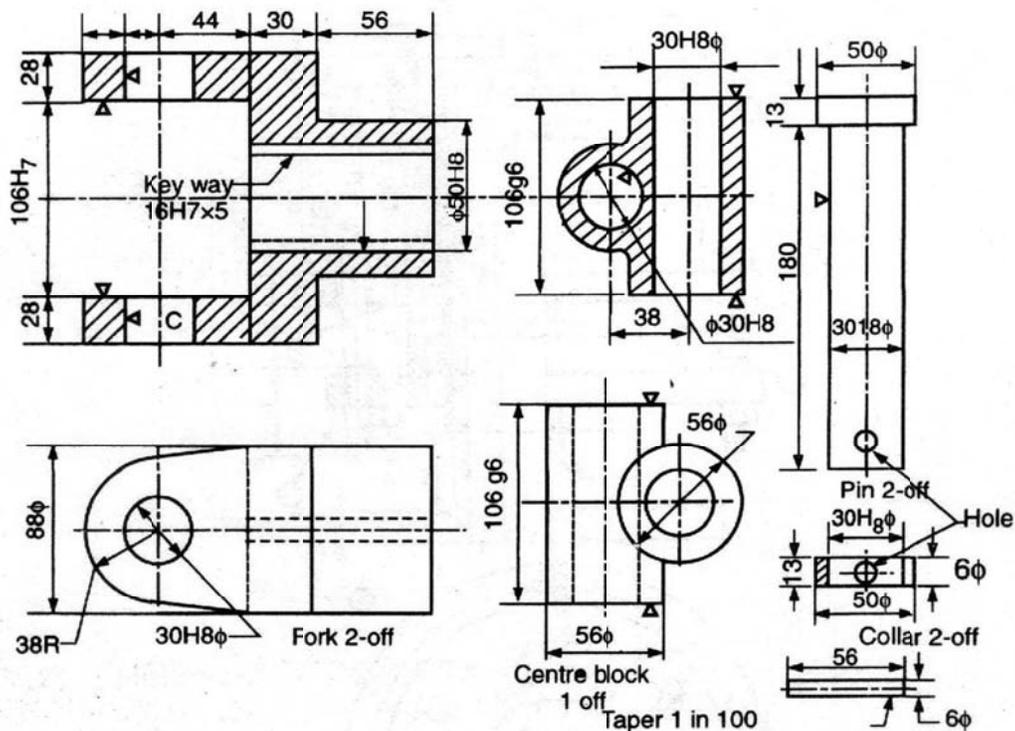
- A vertical cone, base diameter 75 mm and axis 100 mm long, is completely penetrated by a cylinder of 45 mm diameter. The axis of the cylinder is parallel to Hp and Vp and intersects axis of the cone at a pt. 28 mm above the base. Draw projections showing curves of intersection.
- A vertical cylinder of 70 mm dia. and 90 mm long is penetrated by another cylinder of same diameter and length. The axis of the penetrating cylinder is parallel to H.P. & V.P, and 9 mm away from the axis of the vertical cylinder. Draw the projections showing curve of interpenetration.
- A square prism 60 mm base side and axis length 90 mm is standing on its base on HP. with one of vertical face making an angle of 30° with VP . it is completely penetrated by a horizontal square prism of 45 mm side. The axis of horizontal prism is parallel to VP and 15 mm in front of the axis of the vertical prism. A rectangular face of penetrating prism makes 30° with HP. Draw the projection showing curve of intersection.

Q. 4 Attempt any ONE

(20 Marks)

- Fig '4' shows the details of universal coupling. Draw sectional F.V and T.V. of assembly. Prepare bill of material.

Fig. 4



b) Fig '5' shows the details of screw jack. Draw sectional F.V and T.V of the assembly. Prepare bill of material.



Fig. 5

Q.5 Attempt any ONE

(20 Marks)

- a) Fig. 6 shows the details of tool post. Draw sectional F.V. and T.V. of the assembly. Also prepare bill of material

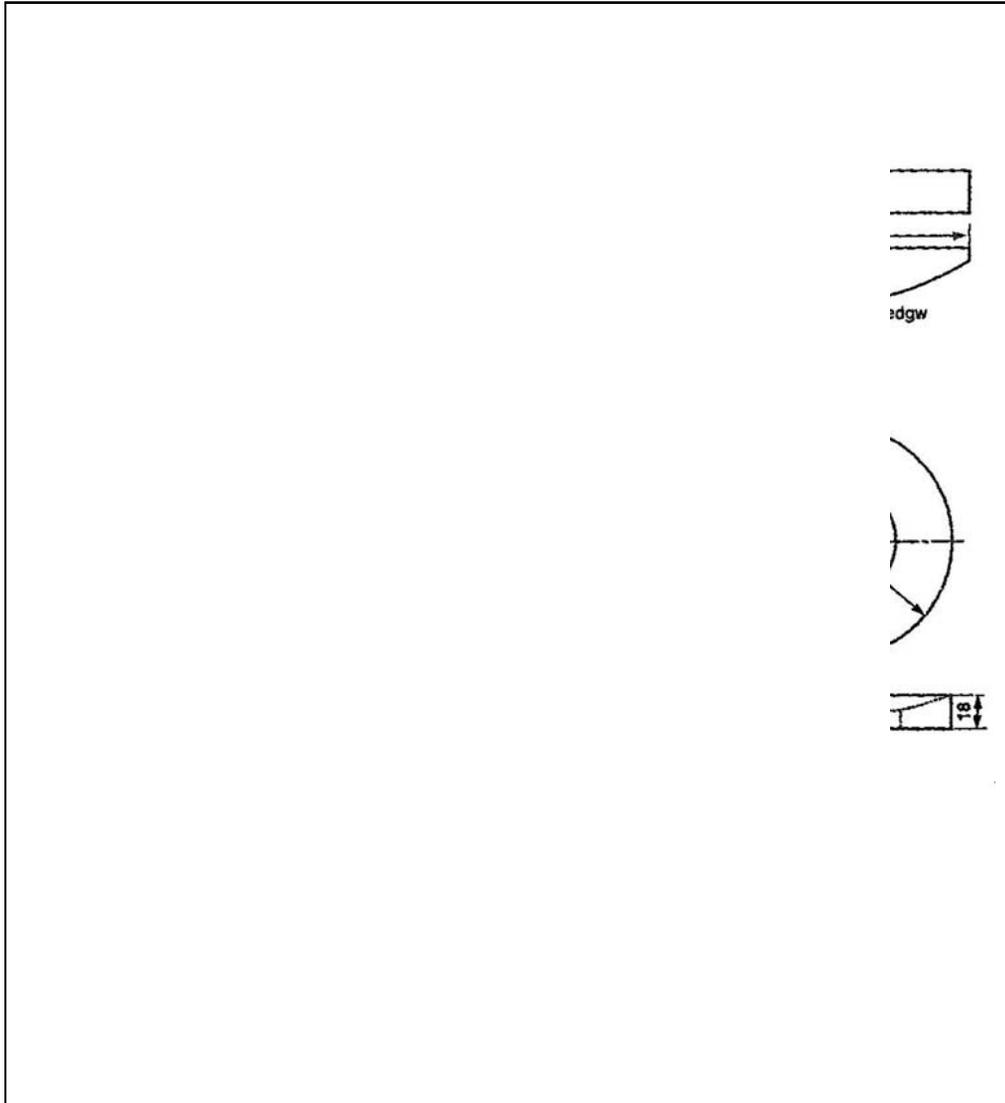


Fig. 6

b) Fig 7 shows assembly of drill jig. Draw detail of Jig plate and Jig bush only. Mention appropriate dimensional tolerances, type of shaft/hole, tolerance grade, geometrical tolerances etc on each detail if required. Refer tolerance table provided with fig.

Fig. 7

