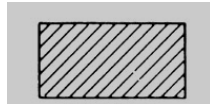


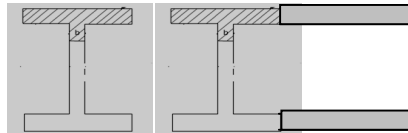


**Que 1: a) Conventional representations ( any Four) ( 4 x 2 Marks)**

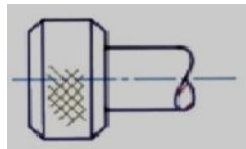
i) Steel



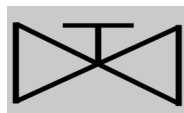
ii) I-Section



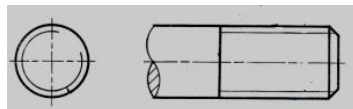
iii) Diamond knurling



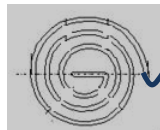
iv) Gate Valve



v) External Screw thread



vi) Spiral spring



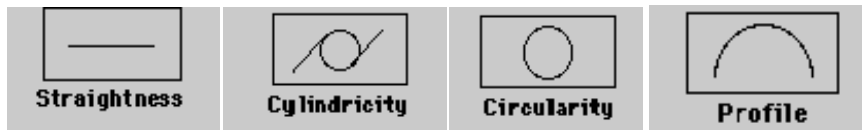
**( 02 marks for each correct representation)**



**Q 1b) Geometrical tolerances symbols ( any Three)**

**( 3 x 4 Marks)**

i) Symbols

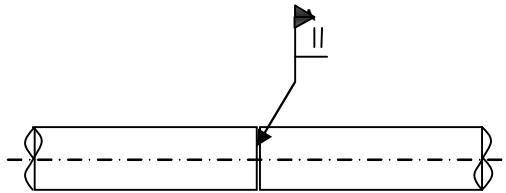


( 01 mark for each correct symbol)

- ii) Shaft size max dia 39.98 mm & min 39.96 mm  
Hole size max dia 40.02 mm & min 39.96 mm  
Max allowance = max hole size – min shaft size  
 $= 40.02 - 39.96 = + 0.06$   
Min allowance = min hole size – max shaft size  
 $= 39.96 - 39.98 = - 0.02$

**The type of fit is TRANSITION**

- iii) x - means **Parallelism** of line (wrt datum A) within 0.02 mm  
y-means **Perpendicularity** of line (wrt datum A) within 0.03 mm
- iv) Square butt weld with convex counter





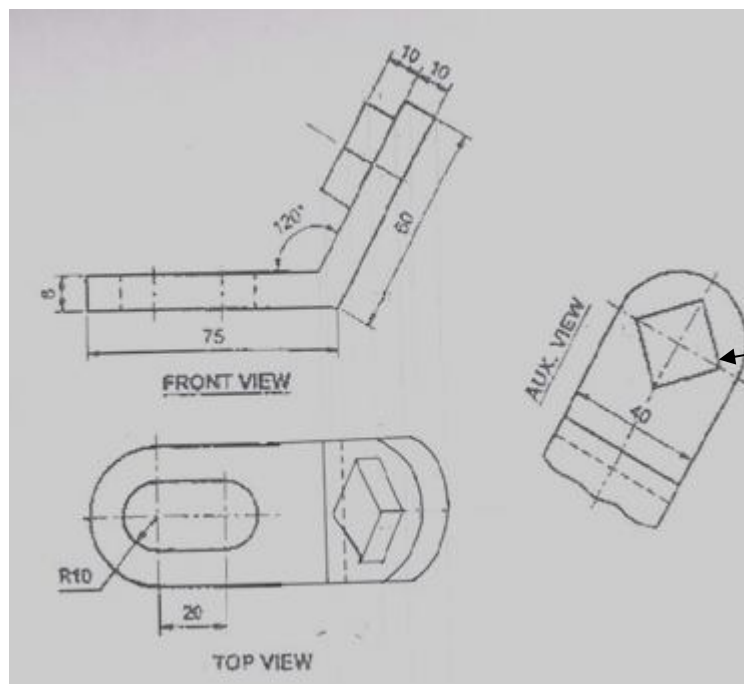
**Q 2 a) Auxilliary View Problem**

**For Front View: 2 marks**

**Aux view : 2 marks**

**Top View : 4 marks**

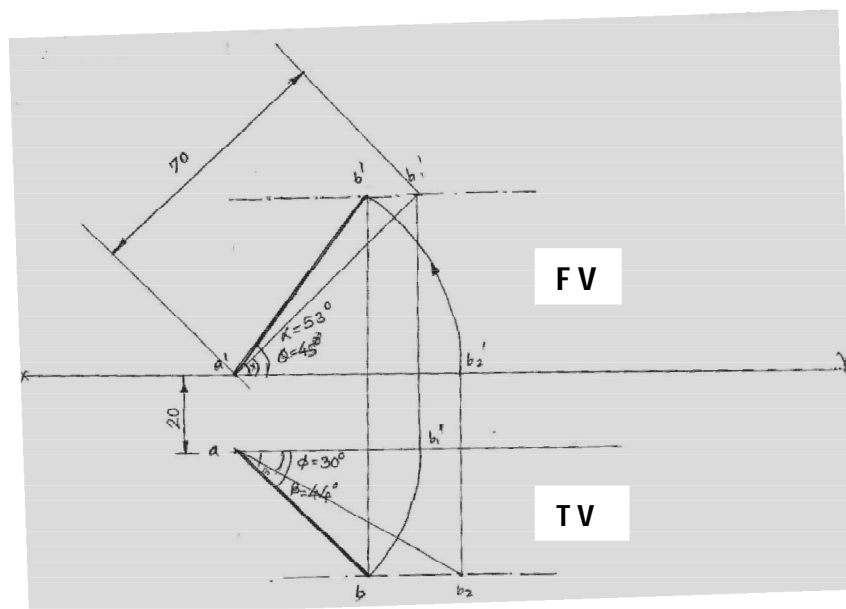
**All views should have dimensions given by candidates**



Note: Assume suitable dimensions of square

**Q2 b) i) Line problem**

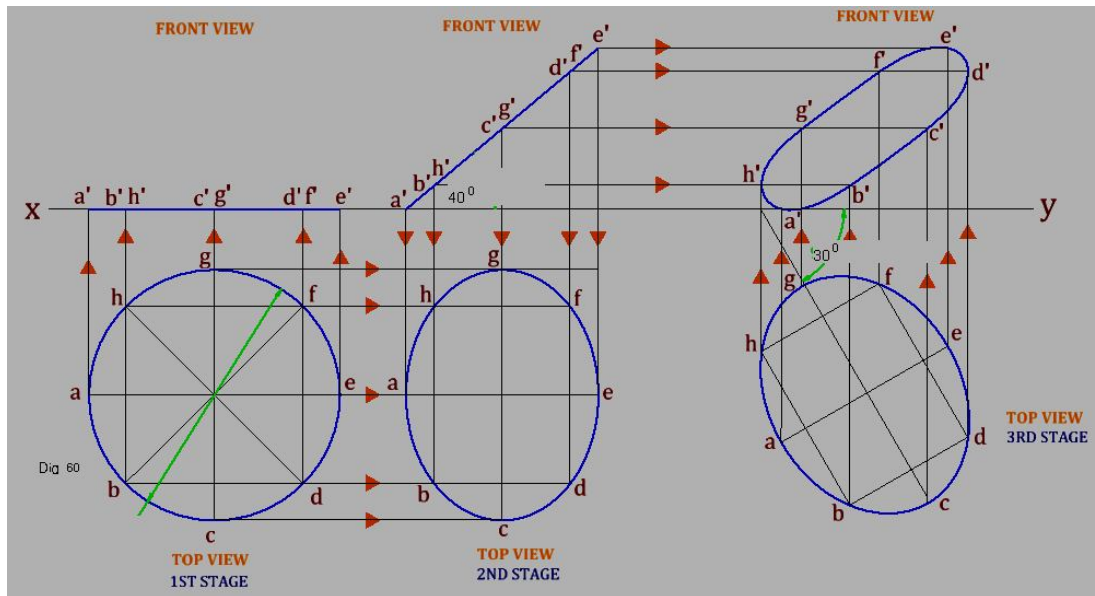
**For F V : 4 marks and T V : 4 marks**





**Q2 b) ii) Circular Plane problem**

Stage 1 drawn : 2 marks    Stage 2 drawn : 2 marks    Stage 3 drawn : 4 marks

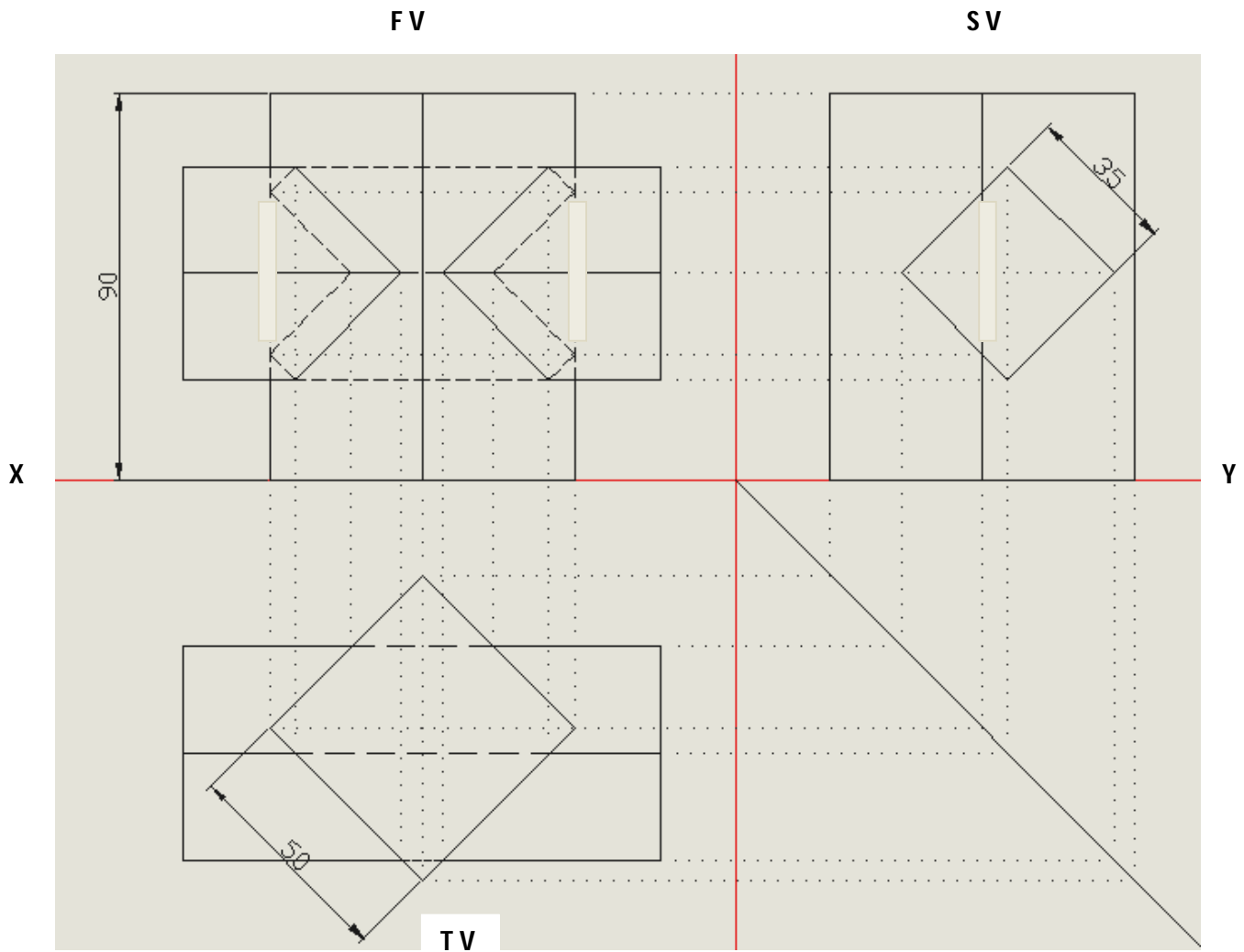




**Q 3 a) Prism x Prism Intersection Problem**

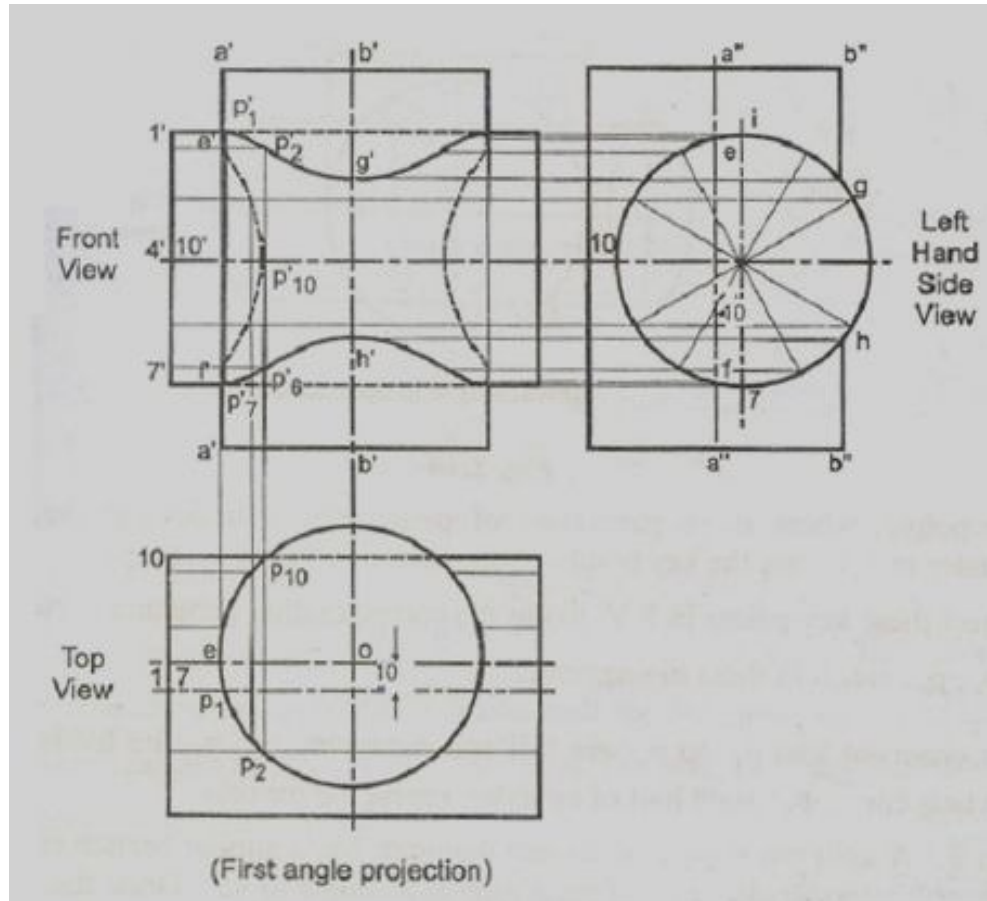
**F V : 6 Marks    T V : 2 Marks    S V : 2 Marks**

**( Intersection Points are not named and shown )**



### Q 3 b) Cylinder x Cylinder Intersection Problem

F V : 6 Marks    T V : 2 Marks    S V : 2 Marks





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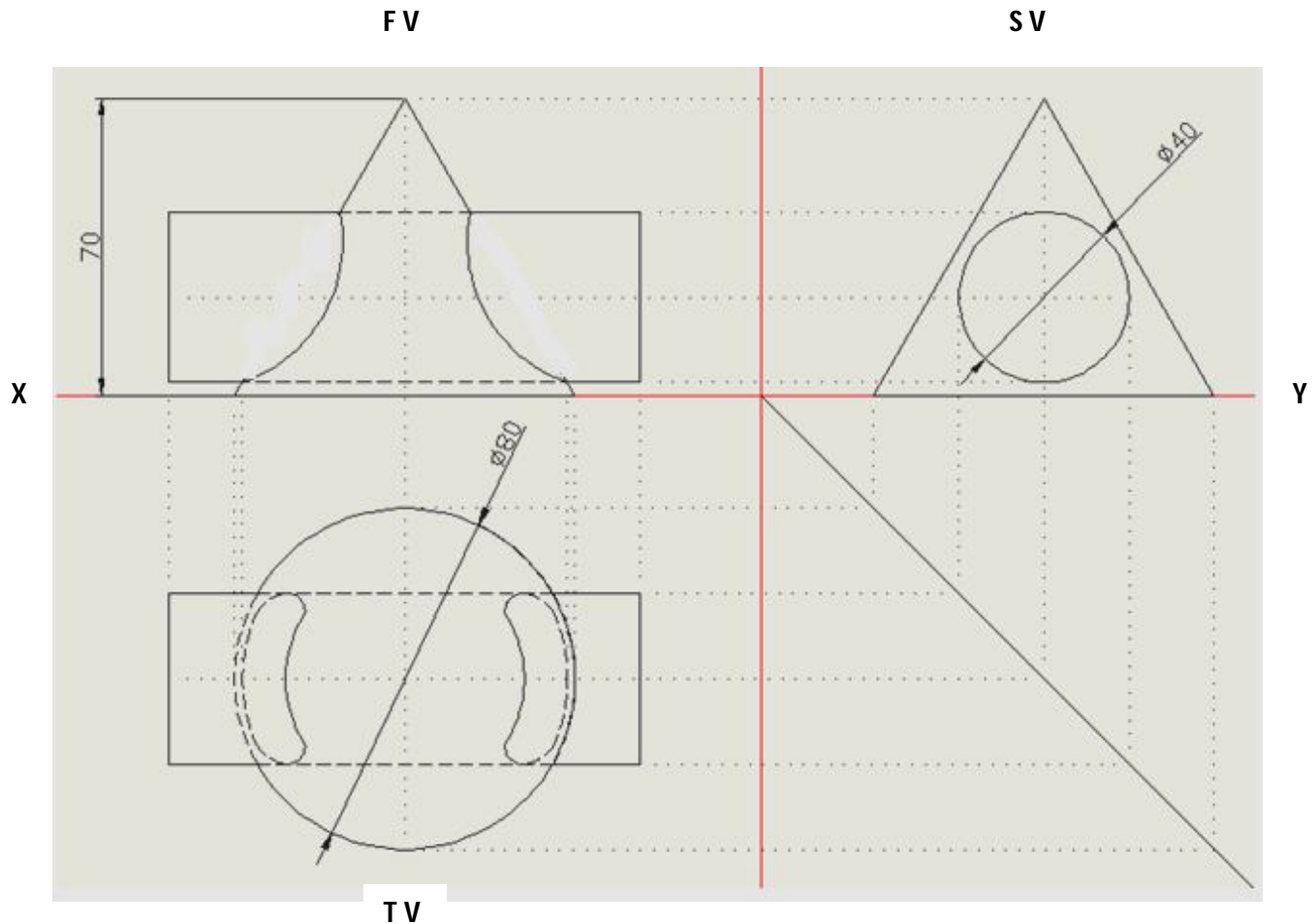
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**Q 3 c) Cone x Cylinder Intersection Problem**

F V : 6 Marks    T V : 2 Marks    S V : 2 Marks





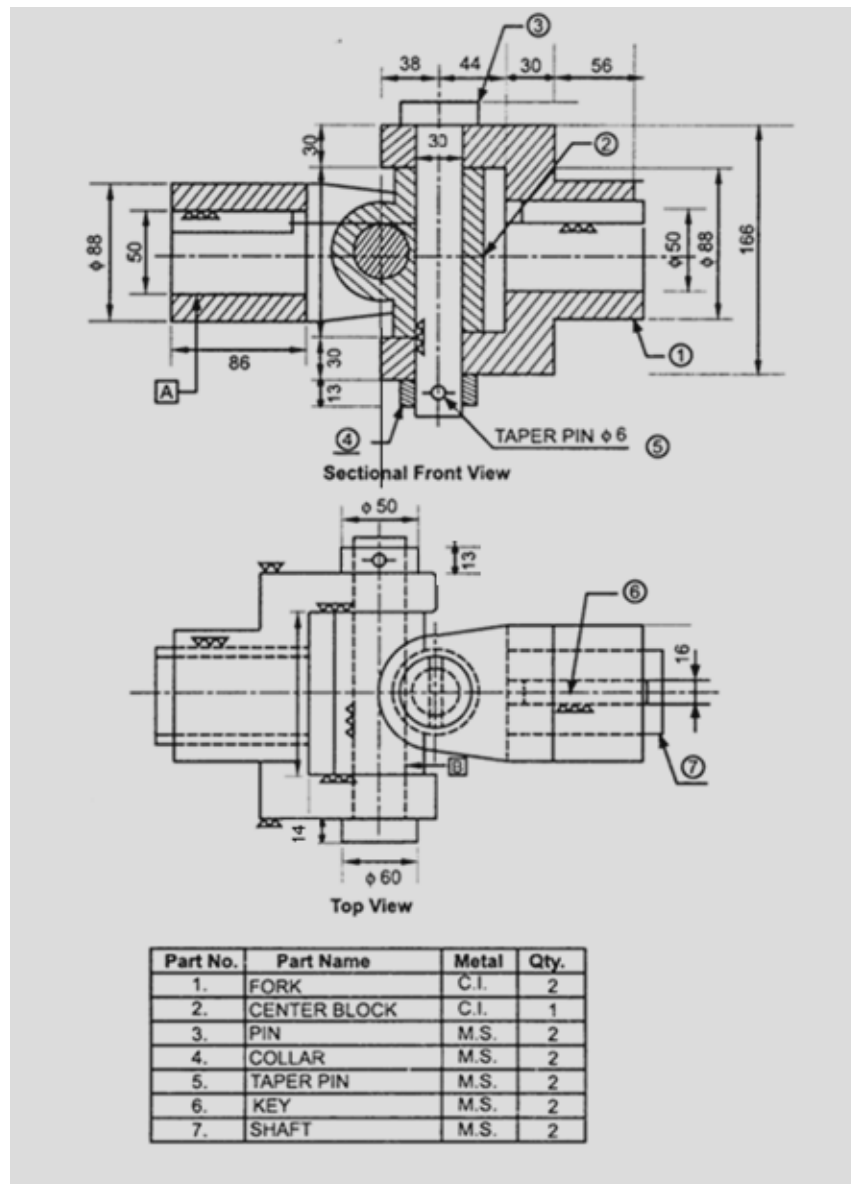
**Q 4 a) Universal Coupling details ( 20 Marks)**

Sect. front view : 10 Marks

Top view : 8 marks

Bill of matl : 2 marks

All above views ( i & ii) should have dimensions given



**Bill of Material**





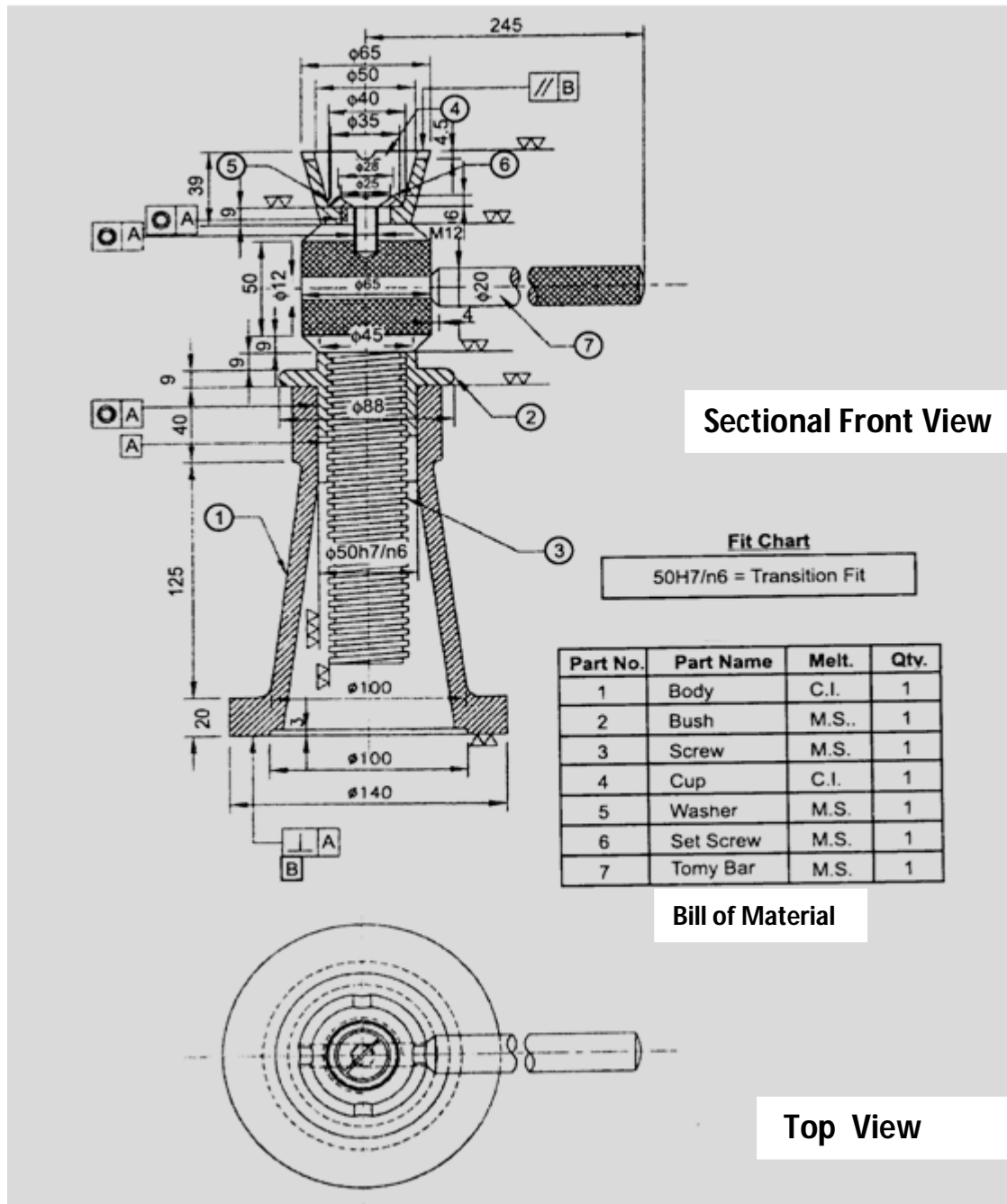
Q 4 b) Assembly Screw Jack ( 20 Marks)

Sect front view : 10 marks

Top view : 6 marks

Show fit chart : 2 marks

Bill of material : 2 marks

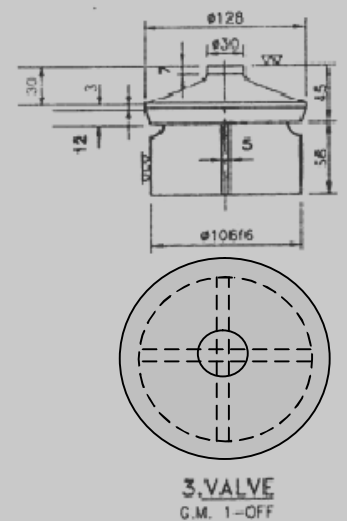
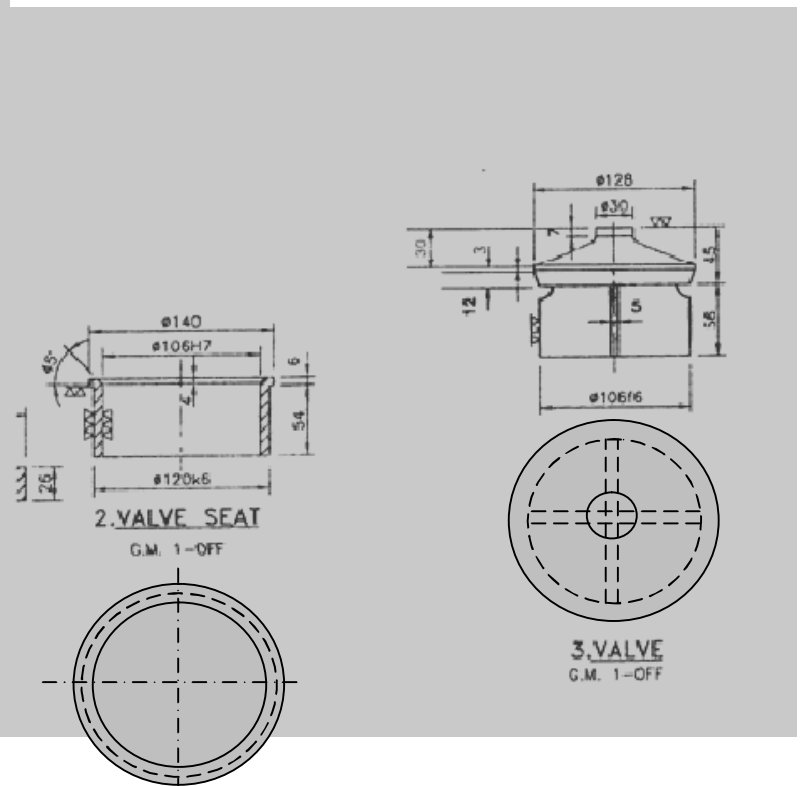
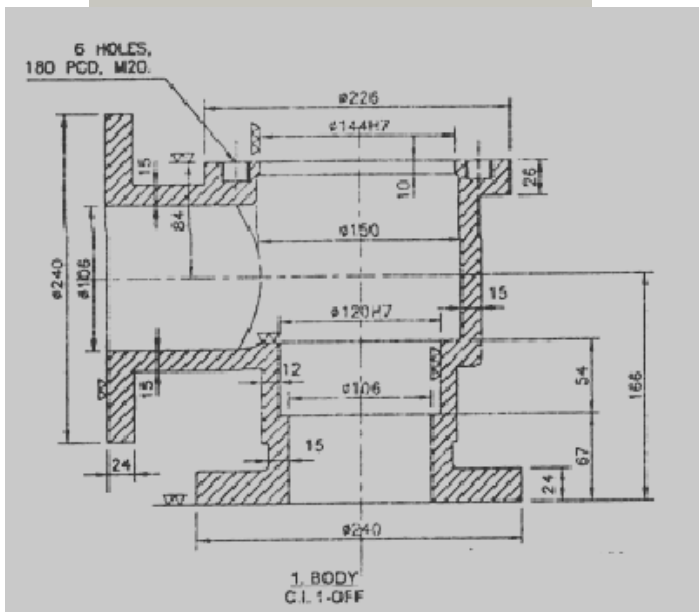
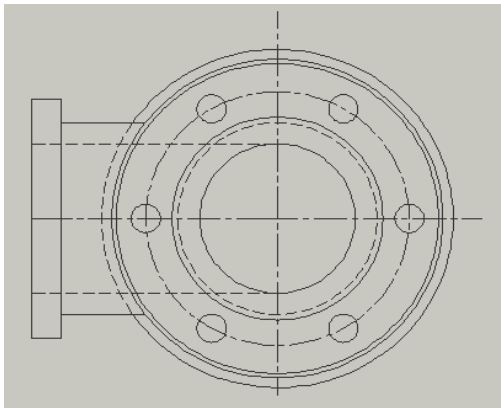




**Q 5 a) Details of Non Return Valve ( 24 Marks)**

Body : S F V : 8 marks & T V : 4 marks      Valve : F V : 3 marks & T V : 2 marks

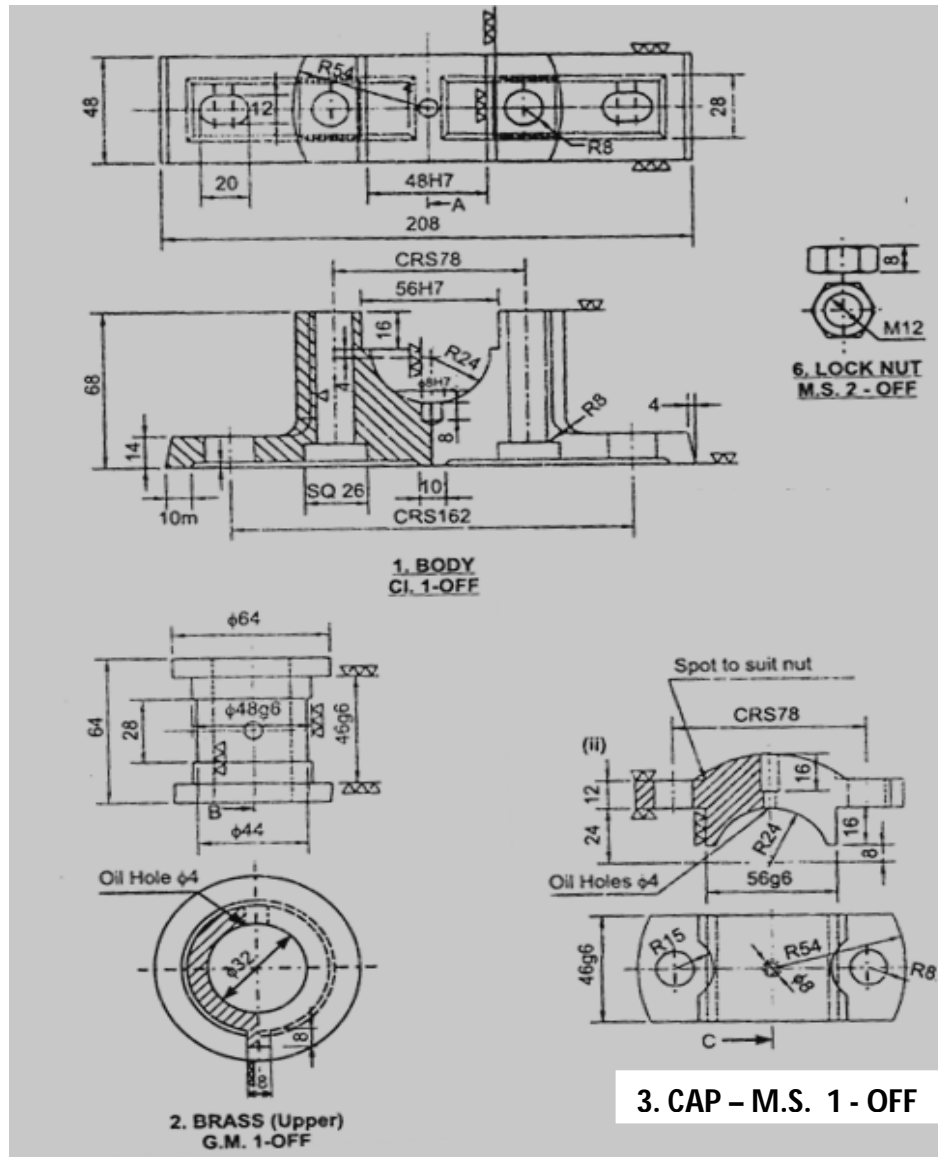
Valve Seat : F V    2 marks & T V : 2 marks    Showing of Geo. Tolerances on views    3 marks





Q 5 b) Details of Pedestal Bearing

( 24 Marks)



- i) Body : Half Sectional F V : 7 marks & T V : 5 marks
- ii) Brass : F V 2 marks & T V : 2 marks
- iii) Cap : Half Sectional F V : 3 marks & T V : 3 marks
- iv) Lock nut : F V : 1 marks & T V : 1 marks