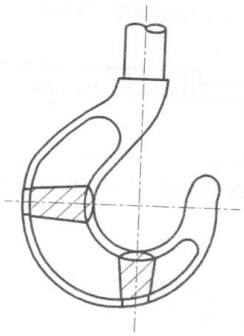
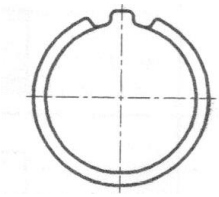
MODEL ANSWER

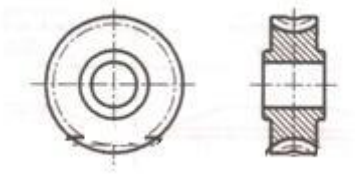
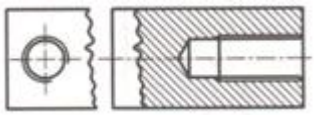
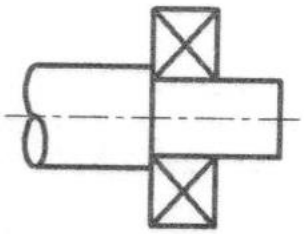
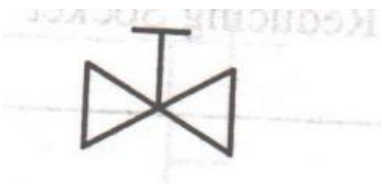
WINTER– 17 EXAMINATION

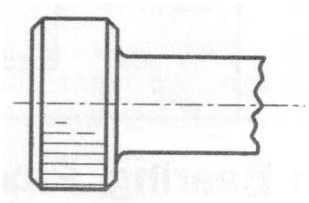
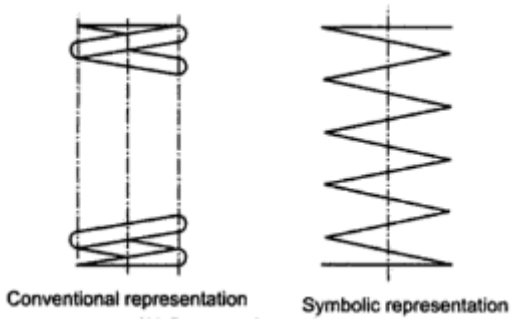
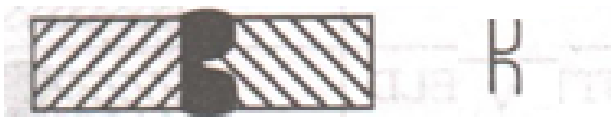
Subject Title: MECHANICAL ENGG.DRAWING Subject Code: 17305

Important Instructions to examiners:

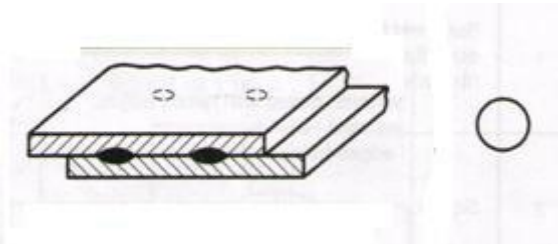
1) The answers should be examined by key words and not as word-to-word as given in the model answer scheme.
2) The model answer and the answer written by candidate may vary but the examiner may try to assess the understanding level of the candidate.
3) The language errors such as grammatical, spelling errors should not be given more Importance (Not applicable for subject English and Communication Skills.
4) While assessing figures, examiner may give credit for principal components indicated in the figure. The figures drawn by candidate and model answer may vary. The examiner may give credit for any equivalent figure drawn.
5) Credits may be given step wise for numerical problems. In some cases, the assumed constant values may vary and there may be some difference in the candidate's answers and model answer.
6) In case of some questions credit may be given by judgement on part of examiner of relevant answer based on candidate's understanding.
7) For programming language papers, credit may be given to any other program based on equivalent concept.

Q. No.	Sub Q. N.	Answer	Marking Scheme
1(A)	**a**	**Revolved Section (section like following figure or equivalent other figure may be considered)** 	**(2) MARKS EACH**
	b	**Splined Shaft** 	

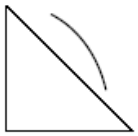
1(A)	**c**	Worm gear 	
1(A)	**d**	**Internal Thread** 	
1(A)	**e**	**Compression Spring With Square Section** 	
1(A)	**f**	**Roller Bearing** 	
1(A)	**g**	**GLOBE VALVE** 	

1(A)	**h**	KNURLING  Or 	
	i	Spring with flat end  	
1(B)	**a**	i) Square butt weld  ii) DOUBLE J BUTT 	**(2) MARKS EACH**

iii) SPOT WELD



iv) CONEX FILLET WELD



1(B) **b** FIT PROBLEM **(4) MARKS**

Shaft size = $\phi 50^{0.04}$

Hole size = $\phi 50^{0.00}$

Maximum Allowance = Upper limit of hole – Lower limit of

= 0.000 – 0.000

= 0.000

Minimum allowance = Lower limit of hole – Upper limit of sh

= 0.000 – 0.040

= –0.04

Here interference will result.

1(B) **c**

GRINDING – MANUFACTURING METHOD
N_7 - SURFACE ROUGHNESS VALUE IN MICRON METER
5 - MACHINING ALLOWANCE
C - DIRECTION OF LENGTH/LAY CIRCULAR
100 - SAMPLING LENGTH
(50) - OTHER ROUGHNESS VALUE

(4) MARKS

2A

Front view 04 Marks , Top View 06 Marks , Partial Auxilliary View 02 Marks

Notes: 1. **Important dimensions are missing in Question figure**

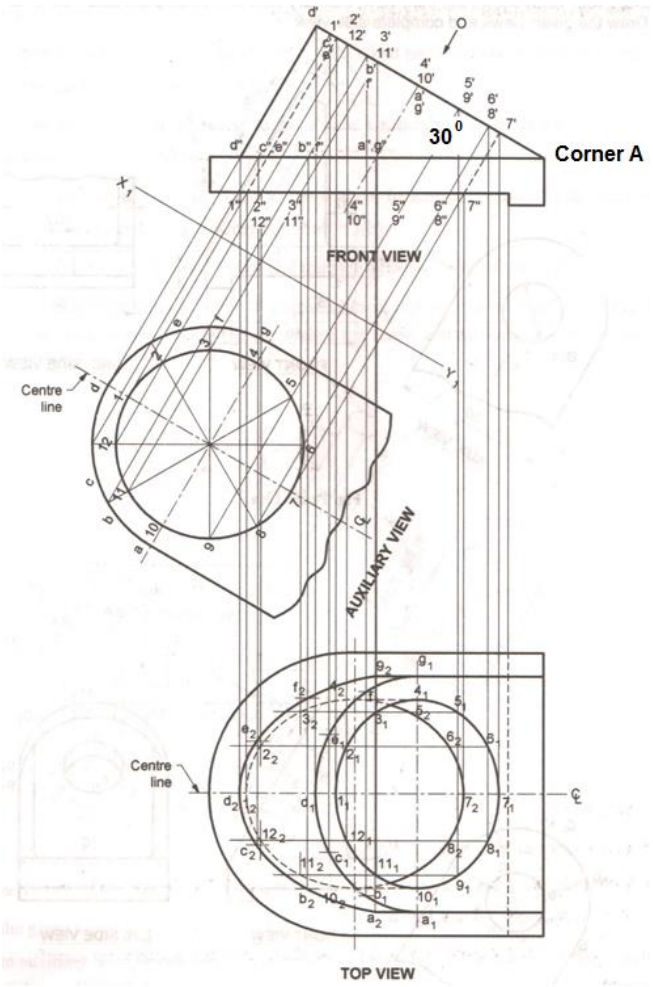
2. With FV dim R45, 56 & 30^0 line above the base plate, Front View cannot be drawn as well as complete solution not possible.

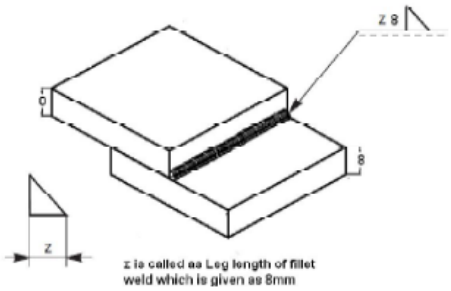
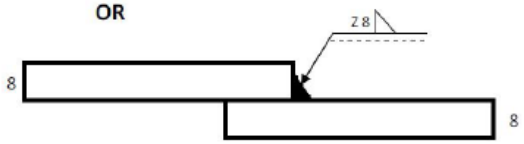
3. 30^0 line should start at corner A. Then only problem may be solved

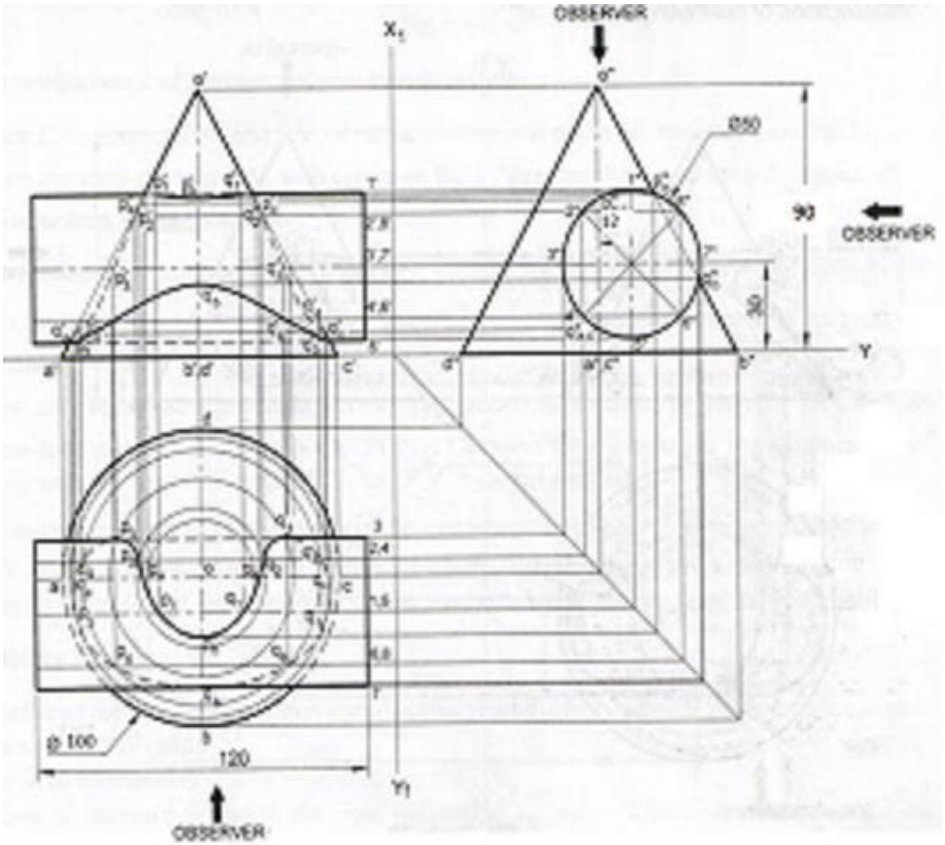
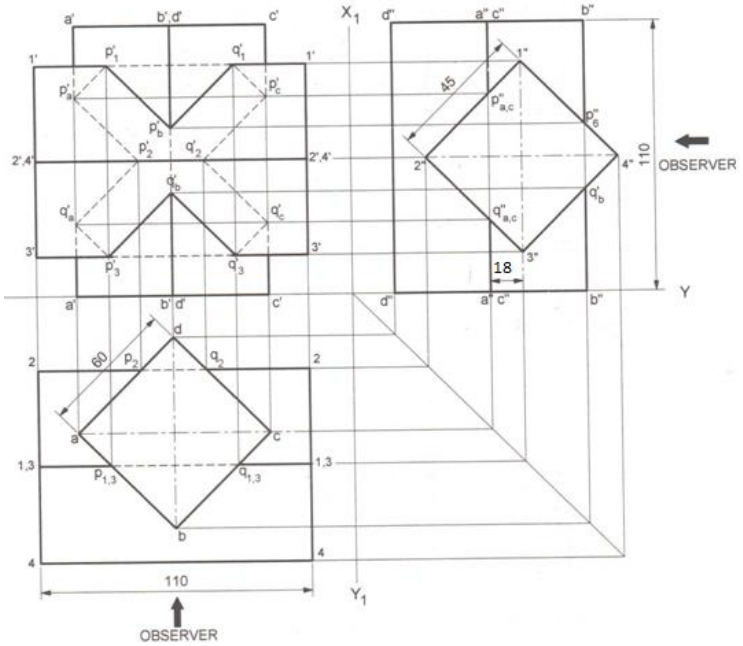
4. Any attempt with given dimensions in QP should be given marks

OR

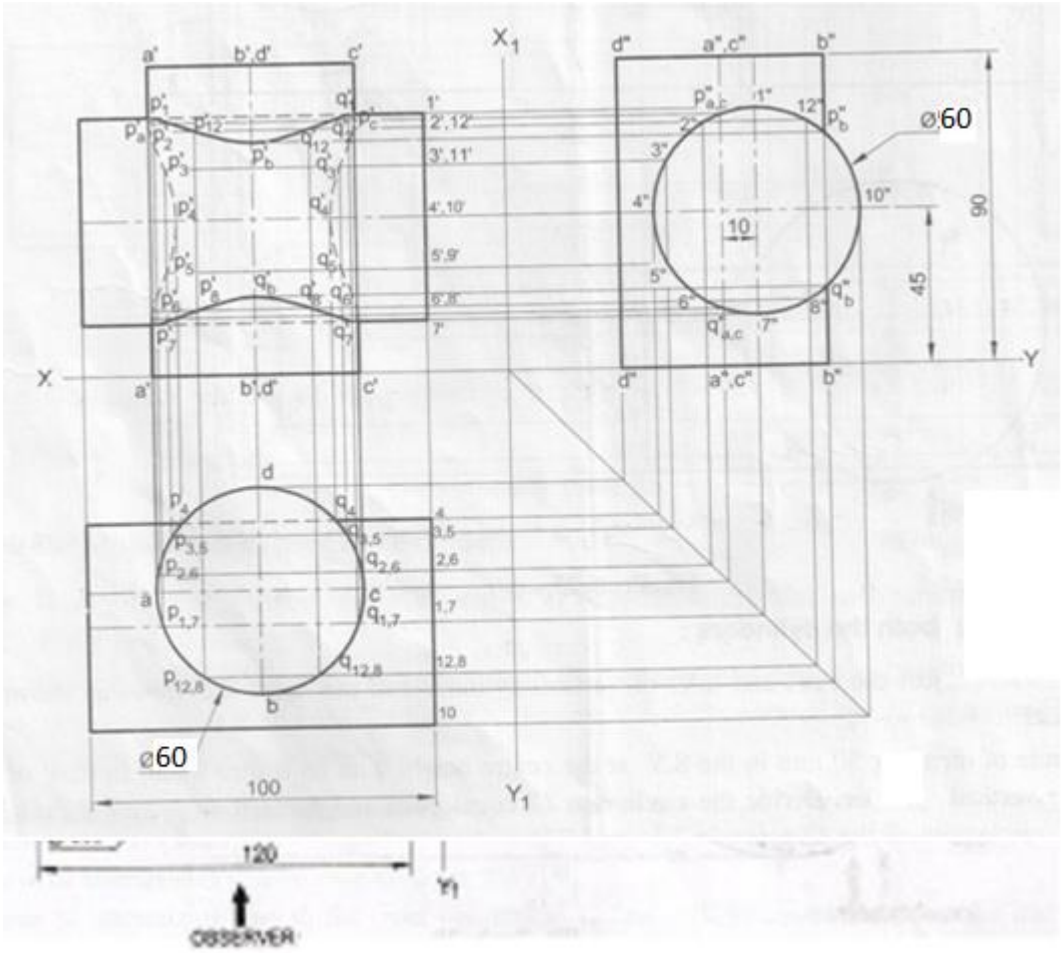
Marks should be given to all the students having drawn following solution with assumed dimensions.



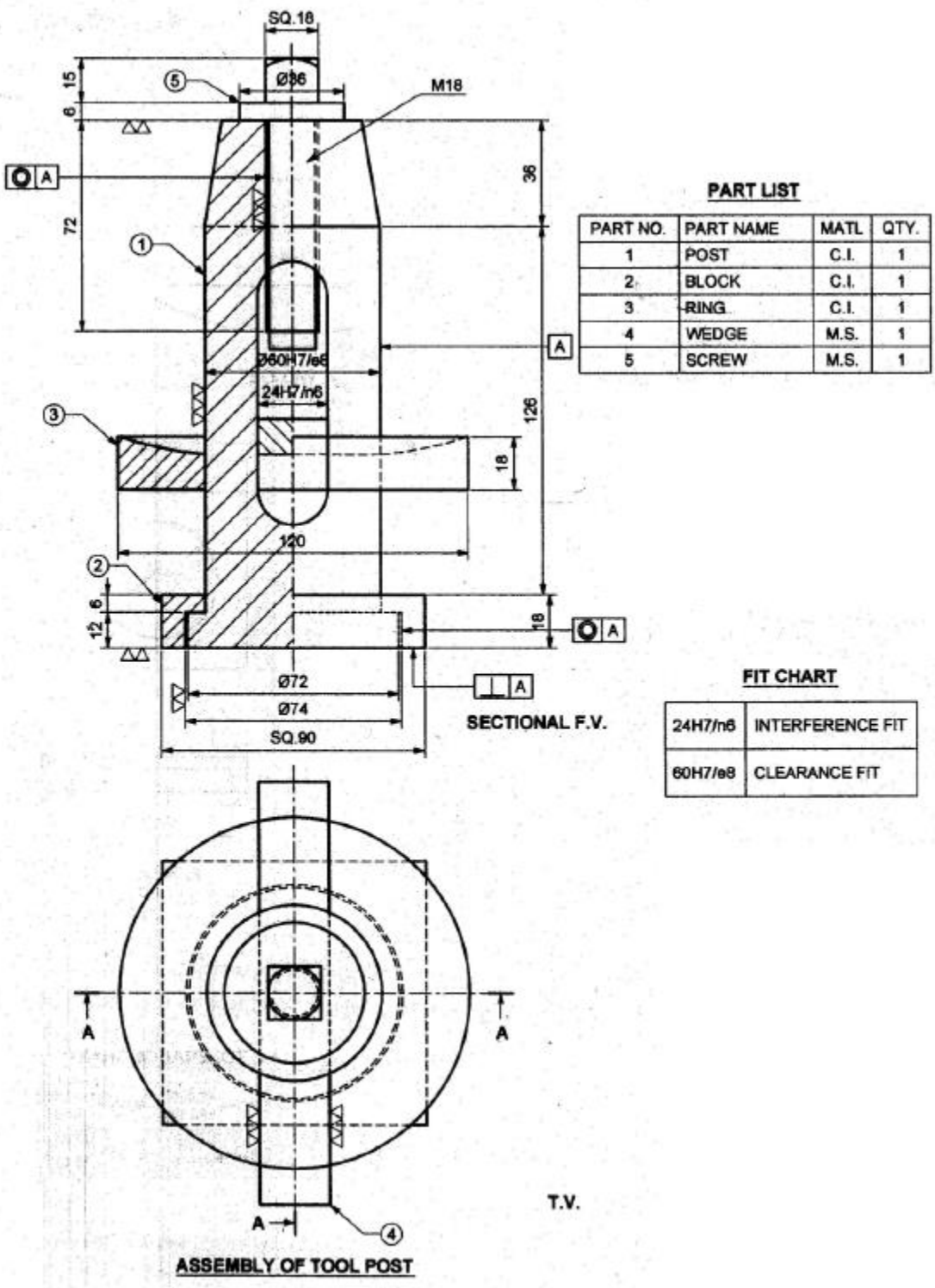
2B	**a**	Meaning of x and y (x) The tolerenced edge is parallel with in 0.03 mm to the datum A (y) The tolerenced edge is perpendicular with in 0.04 mm to the datum A	**(4) MARKS**
2B	**b**	**Two M.S. Plates of 8mm thickness and weld leg length 8mm (04 marks)** **(Any one solution may be given due credit)**  OR  (z is called as Leg length of fillet weld which is given as 8 mm)	**(4) MARKS**
2B	**c**	i) FLATNESS  ii) POSITION  iii) SYMMETRY  iv) TOTAL RUN OUT 	**(01) MARK EACH**

3	a	**Front View 04 Marks, Top View 04 Marks, Side View 02 Marks** 	
3	b	**Front View 04 Marks, Top View 04 Marks, Side View 02 Marks** 	

3	c	**Front View 04 Marks, Top View 04 Marks, Side View 02 Marks**	



4	a	**Sectional Front View 10 Marks, Top View 06 Marks, Bill of Material 02 Marks, Type of fit 02 Marks**	



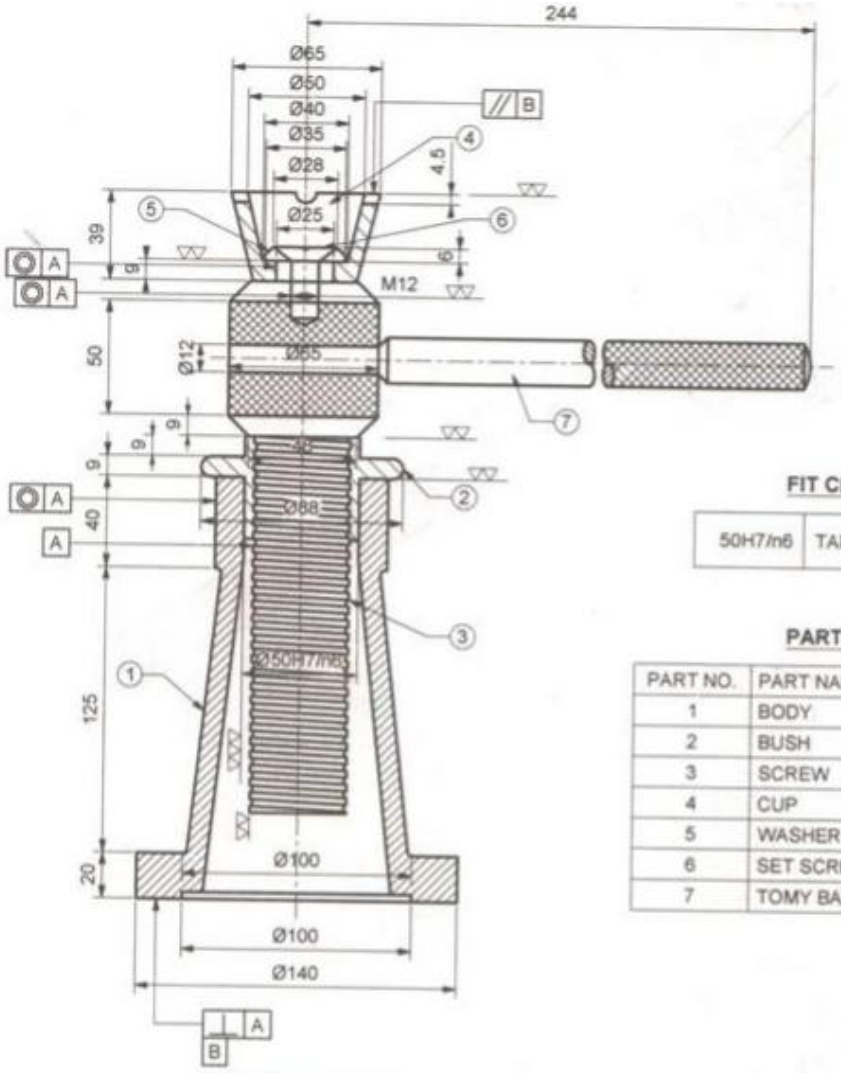
PART LIST

PART NO.	PART NAME	MATL	QTY.
1	POST	C.I.	1
2	BLOCK	C.I.	1
3	RING	C.I.	1
4	WEDGE	M.S.	1
5	SCREW	M.S.	1

FIT CHART

24H7/n6	INTERFERENCE FIT
60H7/e8	CLEARANCE FIT

4	b	**Sectional Front View 12 Marks, Top View 06 Marks, Bill of Material 02 Marks**	

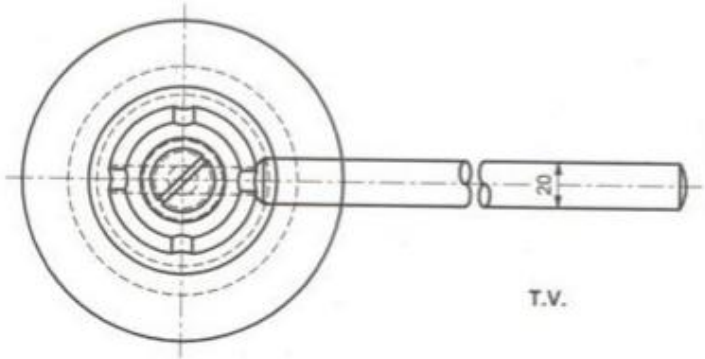


FIT CHART

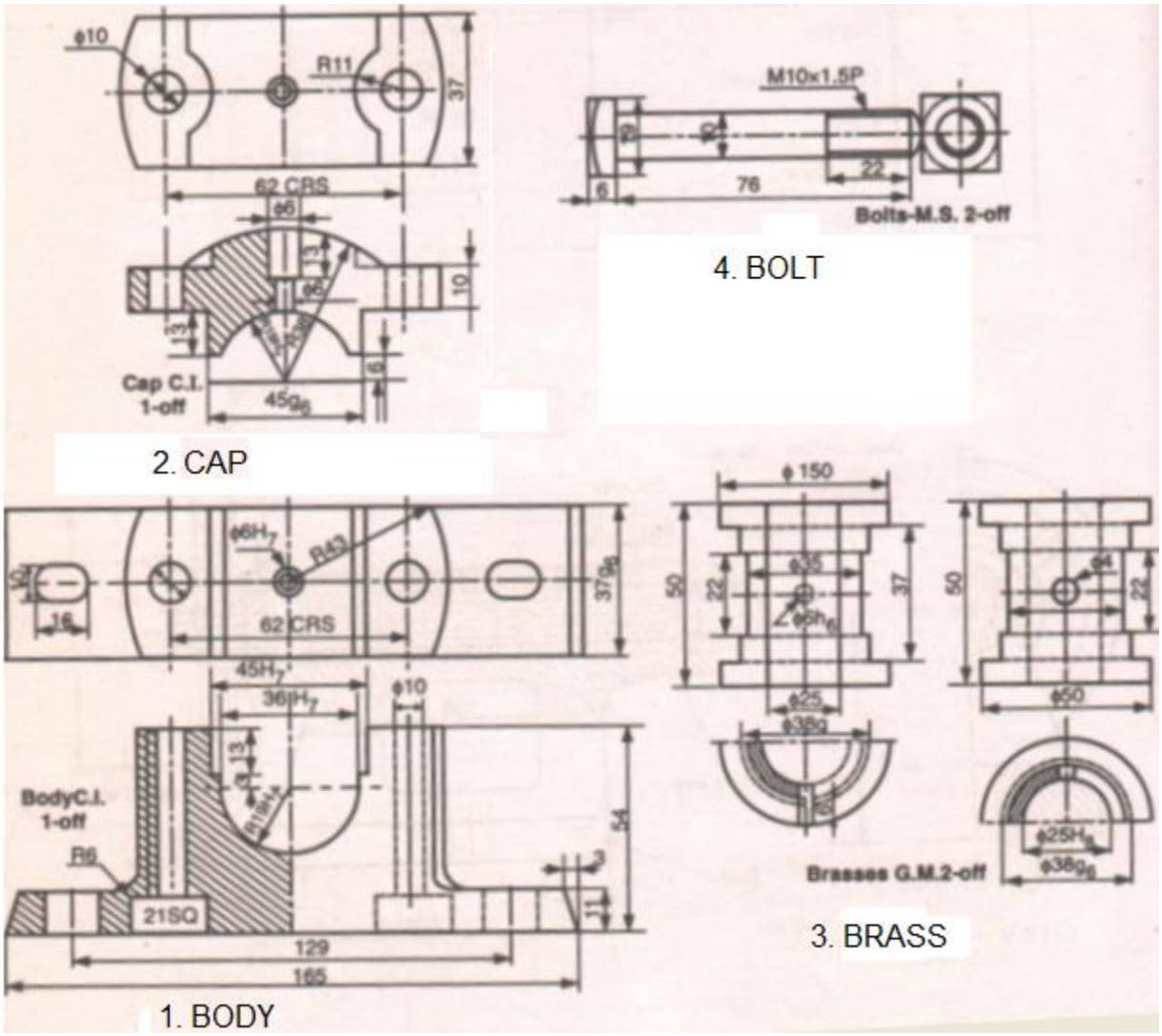
50H7/n6	TANSINTION FIT

PART LIST

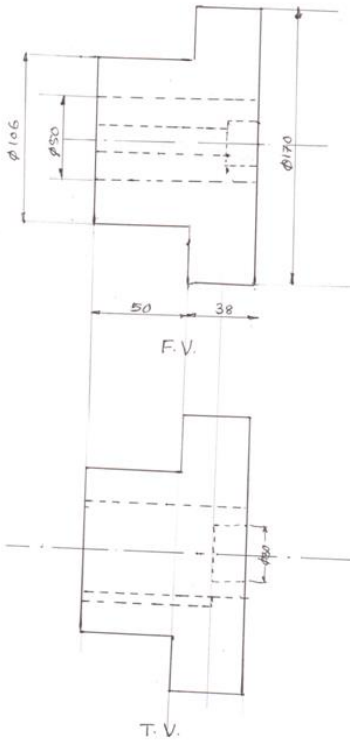
PART NO.	PART NAME	MATL.	QTY
1	BODY	C.I.	1
2	BUSH	M.S.	1
3	SCREW	M.S.	1
4	CUP	C.I.	1
5	WASHER	M.S.	1
6	SET SCREW	M.S.	1
7	TOMY BAR	M.S.	1



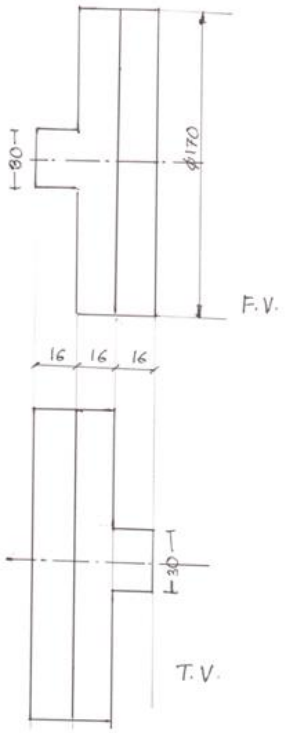
5	**a**	Body – F.V. and T.V. = 10 Marks Brass – F.V. and T.V. = 04 Marks Cap – F.V. and T.V. = 04 Marks Bolt – F.V. and T.V. = 02 Marks	



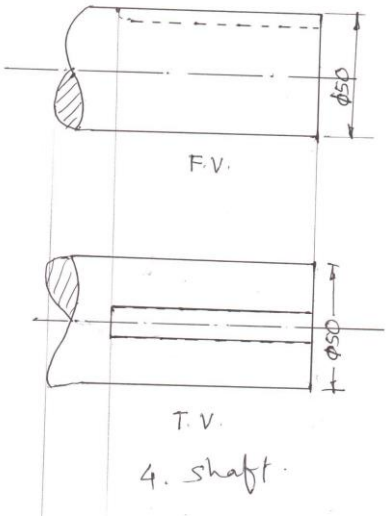
5	**b**	Flange – F.V. and T.V. = 08 Marks Centre Block – F.V. and T.V. = 08 Marks Shaft – F.V. and T.V. = 02 Marks Taper Key = 02 Marks	



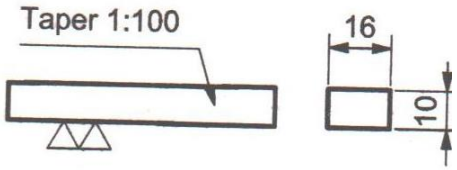
1. Flange.



2. Center Block



4. shaft.



3. KEY
M.S. - 2 OFF