



MODEL ANSWER



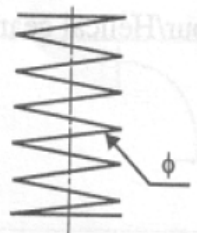
SUMMER- 18 EXAMINATION

Subject Title: MECHANICAL ENGG.DRAWING

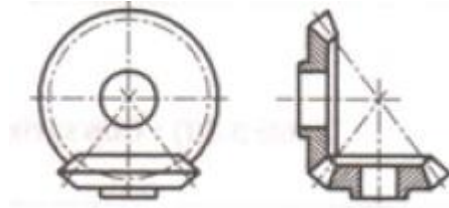
Subject Code: **17305**

Important Instructions to examiners:

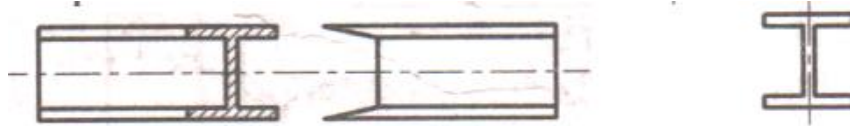
- 1) The answers should be examined by key words and not as word-to-word as given in the model answer scheme.
- 2) The model answer and the answer written by candidate may vary but the examiner may try to assess the understanding level of the candidate.
- 3) The language errors such as grammatical, spelling 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 i ii iii	<p style="text-align: center;">(2 MARKS EACH)</p> <p>STEEL</p>  <p>DIAMOND KNURLING</p>  <p>HELICAL SPRING WITH FLAT END</p> 	2M Each

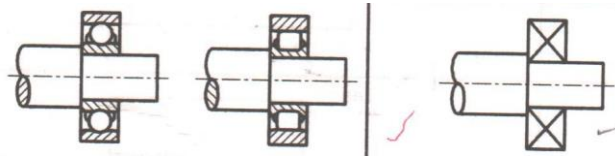
iv BEVEL GEAR



v I SECTION



vi BALL AND ROLLER BEARING



vii GATE VALVE

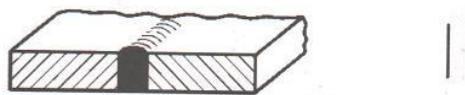


viii INTERNAL SCREW THREAD



b) 1. SQUARE BUTT WELD

i



2 FILLET WELD



2 M
Each

3 SINGLE U BUTT WELD



4 SEAM WELD



ii

$$\begin{aligned} \text{Max. Allowance} &= \text{Upper limit of hole} - \text{Lower limit of shaft} \\ &= 50.018 - 49.988 \\ &= 0.03 \text{ (+ve)} \end{aligned}$$

$$\begin{aligned} \text{Min. Allowance} &= \text{Lower limit of hole} - \text{Upper limit of shaft} \\ &= 50.000 - 50.023 \\ &= -0.023 \text{ (-ve)} \end{aligned}$$

Here interference will result
Hence type of fit is transition fit.

1M

1M

2M

iii

MILLING – MANUFACTURING METHOD

25 - SURFACE ROUGHNESS VALUE IN MICRON METER

5 - MACHINING ALLOWANCE

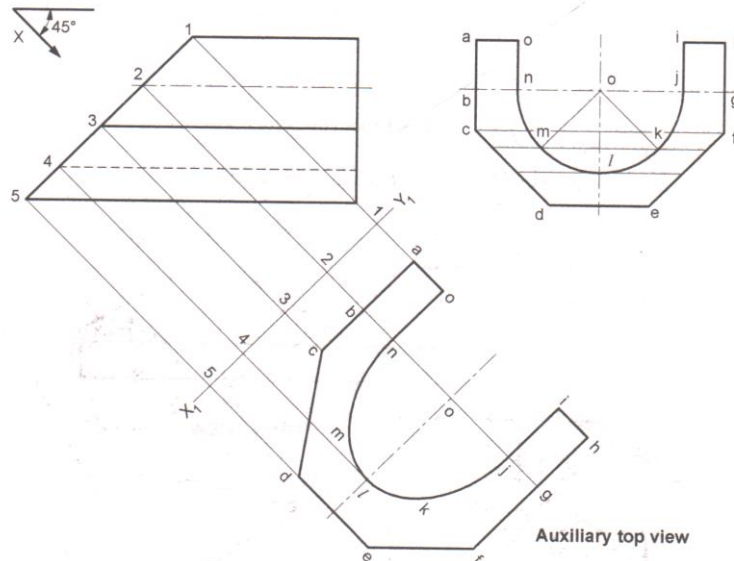
⊥ - DIRECTION OF LEY (Perpendicular)

40 - SAMPLING LENGTH

1M FOR EACH

2

a



F.V

3M

S.V

3M

A.V.

6M

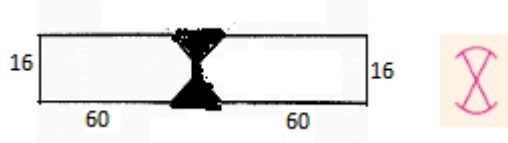


2

b

- i) X – The tolerance edge is parallel within 0.02 mm to the datum line A
- Y - The tolerance edge is perpendicular within 0.03 mm to the datum line A

- ii) Double V Butt weld



iii)

- a) CONCENTRICITY



- b) PARALLELISM



- c) PERPENDICULARITY



- d) PROFILE OF AN SURFACE



2M

EACH

VIEW
2M

SYMBOL

2M

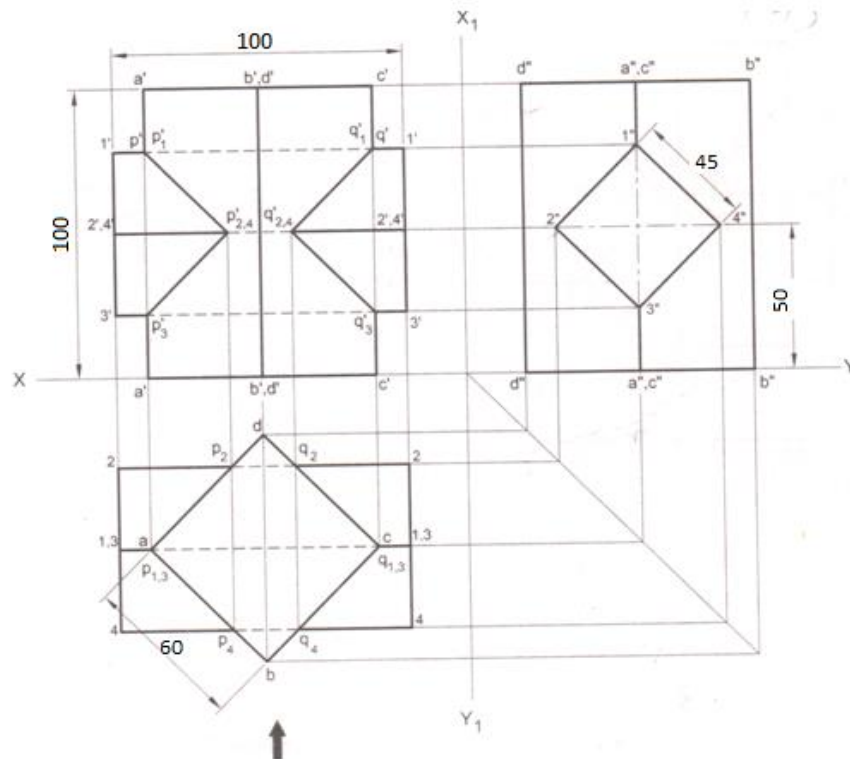
1 M

EACH

3

a)

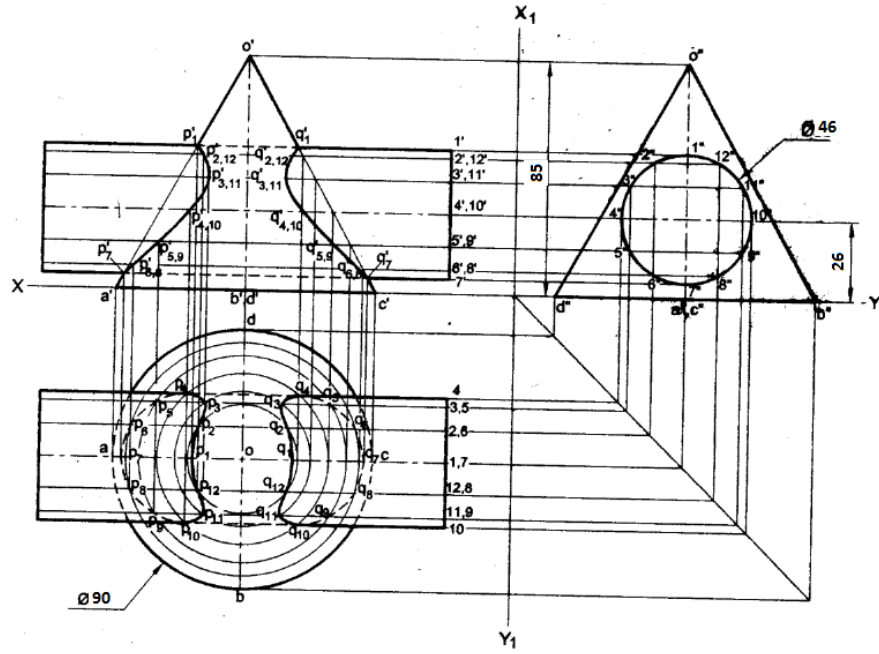
(FV-4, TV- 4, SV -2 MARKS)





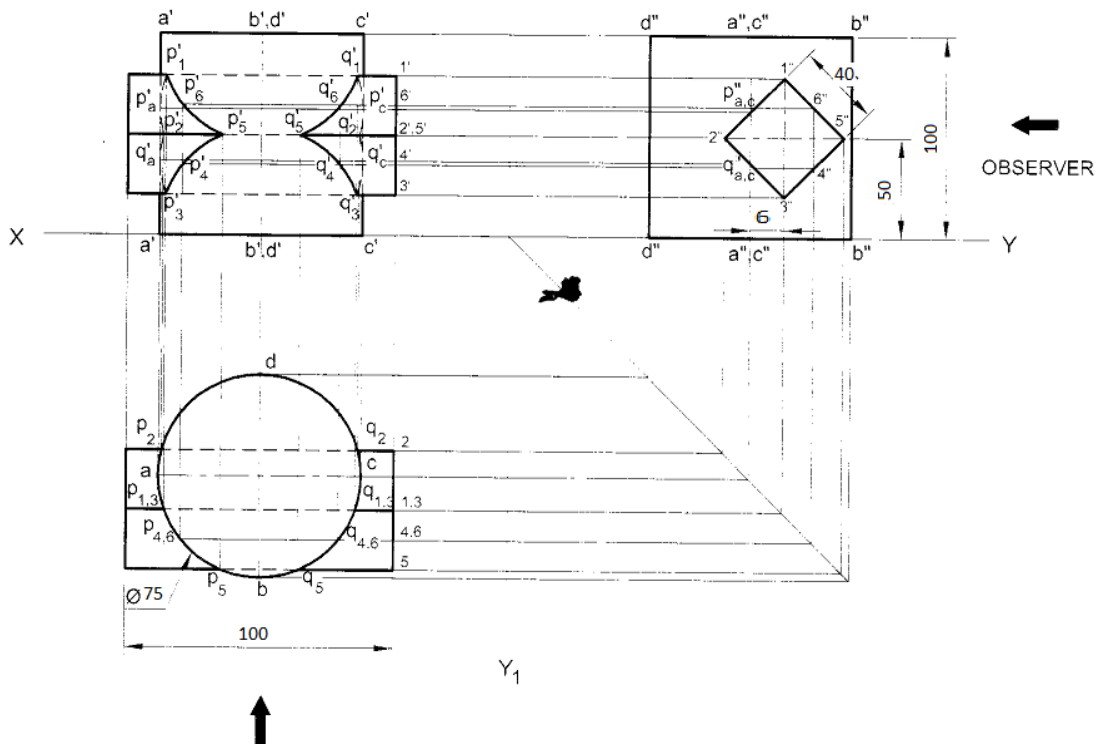
b)

(FV-4, TV- 4, SV -2 MARKS)



c)

(FV-4, TV- 4, SV -2 MARKS)

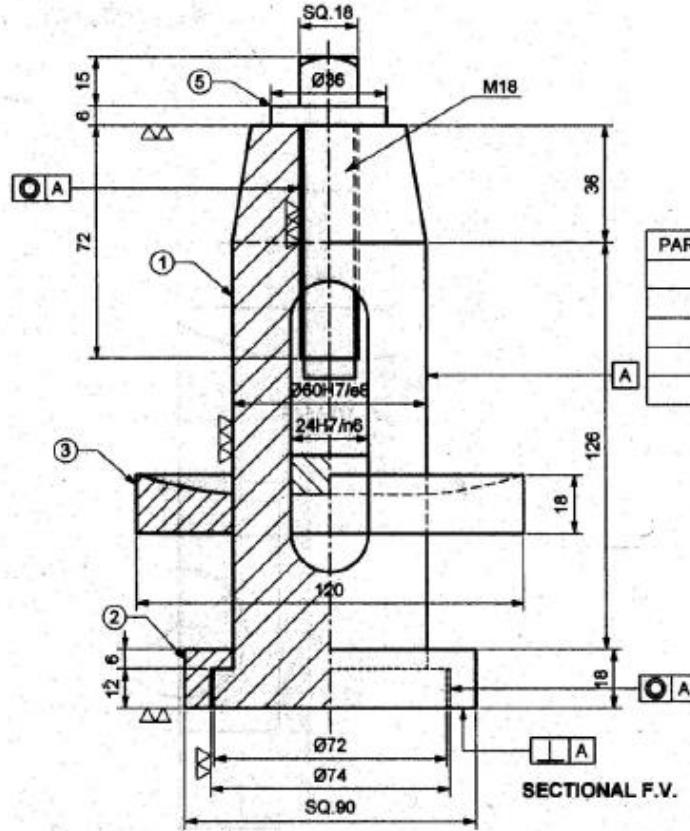


(SECT. FV-12, TV- 06, BILL OF MATERIALS -02 MARKS)



4

a



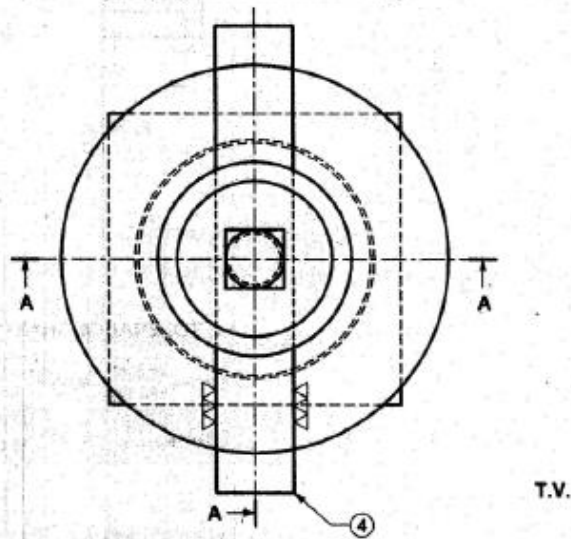
PART LIST

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

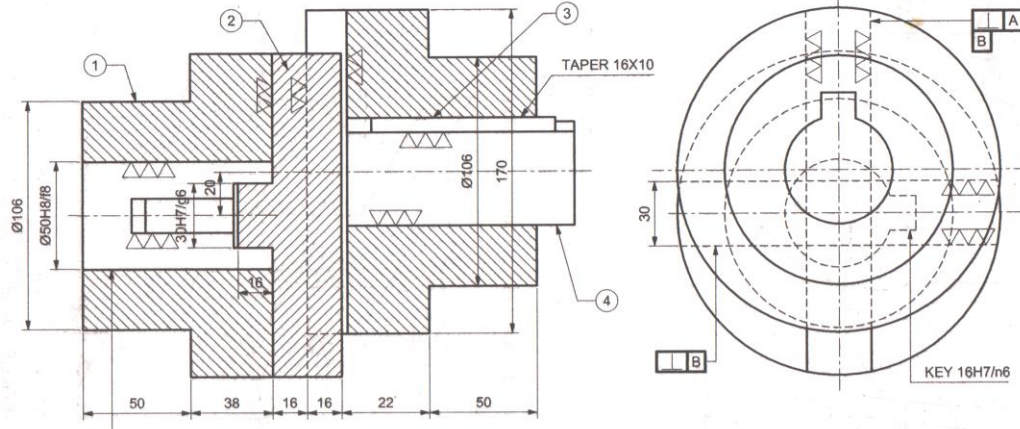
SECTIONAL F.V.



T.V.

ASSEMBLY OF TOOL POST

b



FIT CHART

16H7/n6	TRANSITION FIT
30H7/g6	CLEARANCE FIT
50H8/f8	CLEARANCE FIT

PART LIST

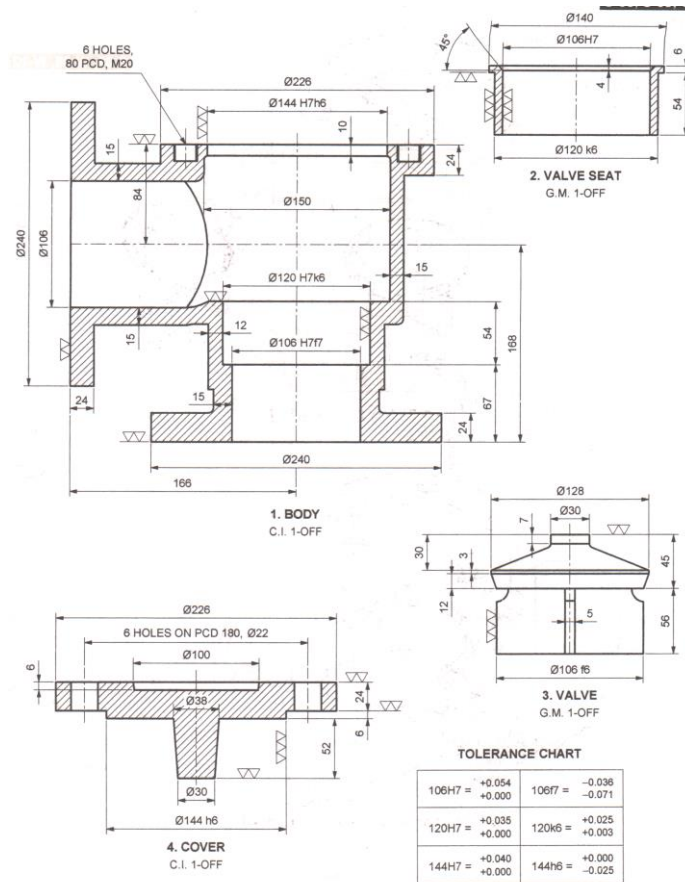
PART NO.	PART NAME	METL.	QTY.
1	FLANGE	C.I.	2
2	CENTER BLOCK	C.I.	1
3	KEYS	M.S.	2
4	SHAFT	M.S.	2

(BODY SECT. FV & HALF TV -08 M , COVER SECT. FV & T.V 4 M, VALVE SEAT SECT.FV & TV -4 M & VALVE FV AND TV 04 Marks)

(Note: Appropriate TV should be considered for each part)

5

a



TOLERANCE CHART

106H7 = +0.054	106f7 = -0.036
106H7 = +0.000	106f7 = -0.071
120H7 = +0.035	120k6 = +0.025
120H7 = +0.000	120k6 = +0.003
144H7 = +0.040	144h6 = +0.000
144H7 = +0.000	144h6 = -0.025

(BODY SECT. FV & TV -10 M , BUSH FV & SECT.T.V 6 M, DISC SECT.FV & TV -2 M & SHAFT 02 Marks)

b

