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WINTER– 14 EXAMINATION

Subject Code: **17305**   **Model Answer**

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.

Q1 a)

i)   Conventional break for round section   **02 MARKS**
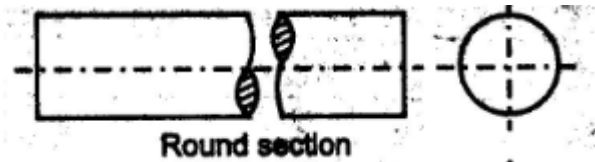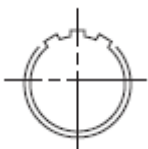

ii)   cast iron   **02 MARKS**

iii) Bevel Gear   **02 MARKS**

iv) Splined shaft   **02 MARKS**

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v)Semi Elliptic leaf spring with eyelets   **02 MARKS**

vi) Rack and pinion   **02 MARKS**
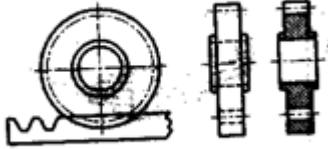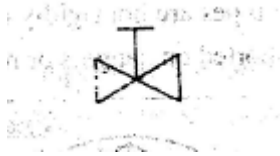

vii) Gate valve   **02 MARKS**

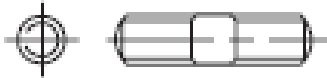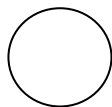viii) External screw threads   **02 MARKS**

b) Attempt any two

 i) Welding Symbols   **(04 marks, 01 marks for each symbol)**

1) Concave fillet weld

2)Spot weld

3)Single –v butt weld

4) Seam weld

ii) Interference fit   04 marks

max. allowance = upper limit size of hole-lower limit size of shaft

= 40.00-40.00

= 00.00

min. allowance = lower limit size of hole- upper limit size of shaft

=40.00-40.04

= (- 00.04)

ii) State the meaning of symbol   04 marks
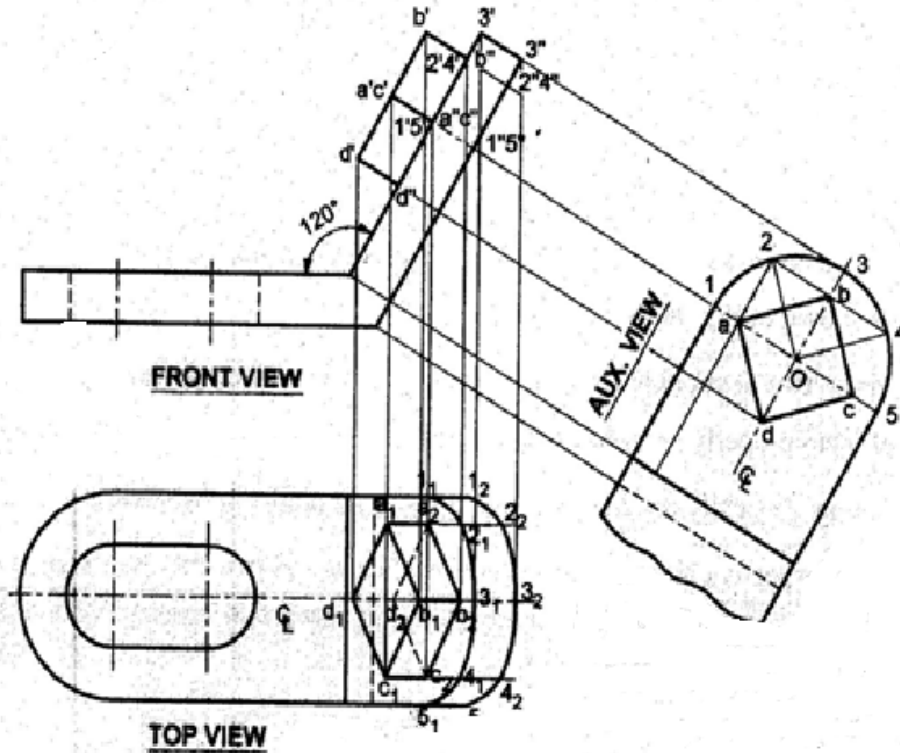
Grinding = Manufacturing method

0.8   =Sampling Leangth

8   = Roughness Value in micron

2   = Machining Allowance

$\perp$ =   Direction of lays

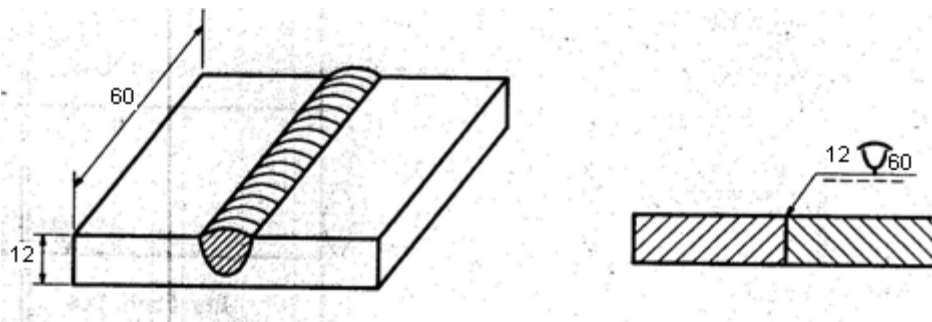**Q2 A) F.V. 03 marks , AUX View 03 Marks and T.V. 06 Marks**

FRONT VIEW

AUX. VIEW

TOP VIEW

B) i)   **04 marks, 02 marks for each**

X= 0.02 mm tolerance is acceptable for Surface parallelism with reference to datum

surface '' A"

Y= 0.03 mm tolerance is acceptable for Surface perpendicularity with reference to

datum surface '' A" .

ii) Welding Drawing   **04 marks**

iii) Geometrical tolerance   **04 marks, 01 marks each**
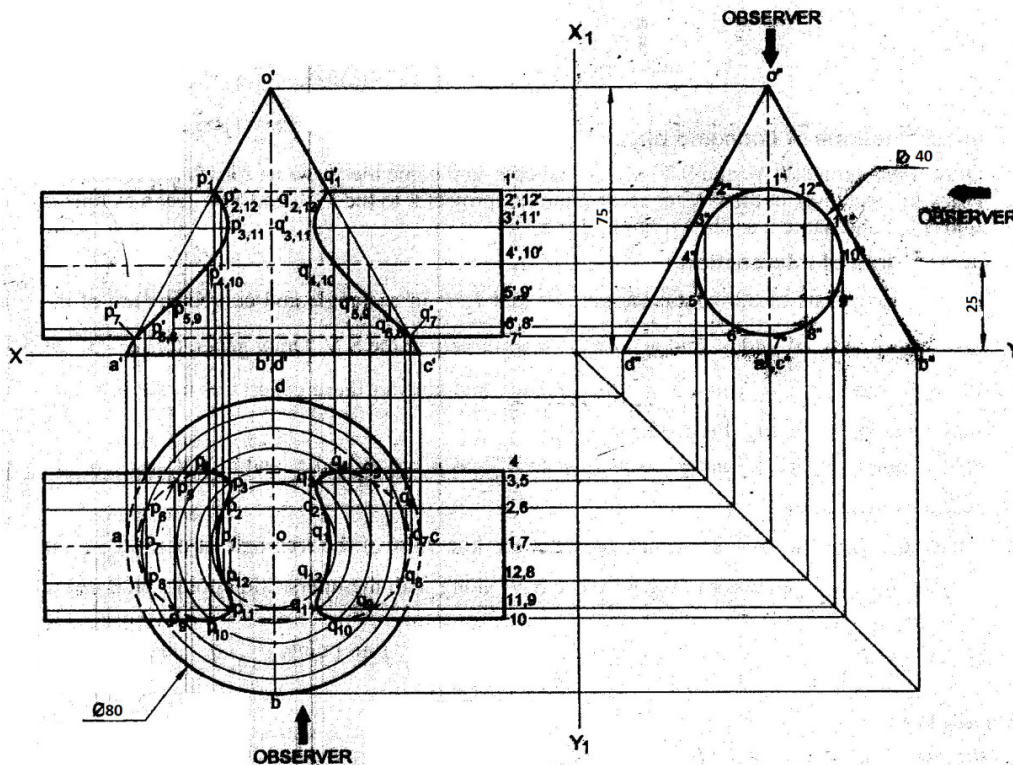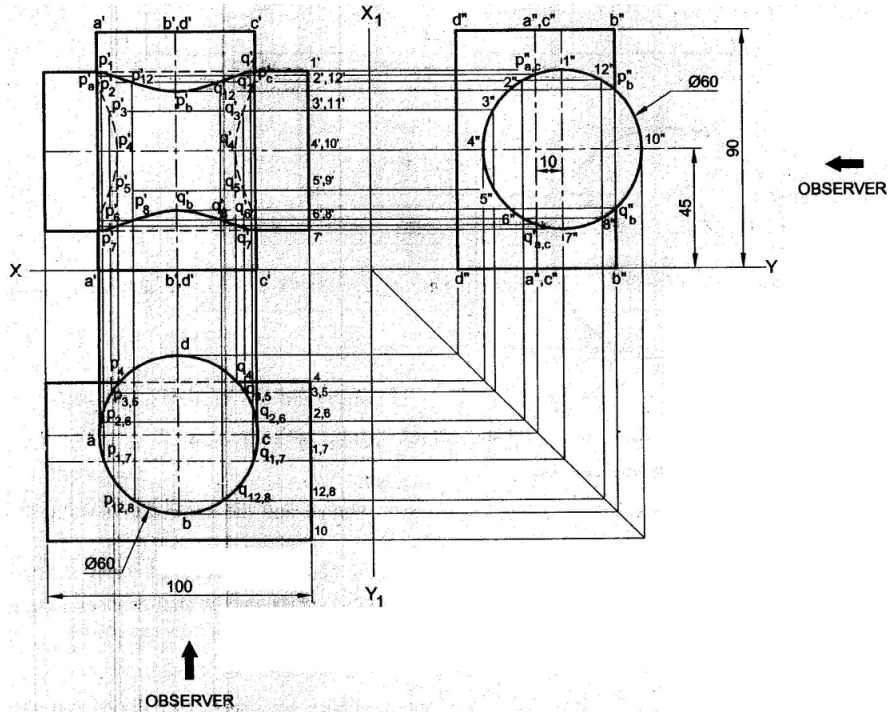
1) Flatness

2) **Cylindricity**

3) **Angularity**

4) **Profile of any Surface**

Q. 03 a)

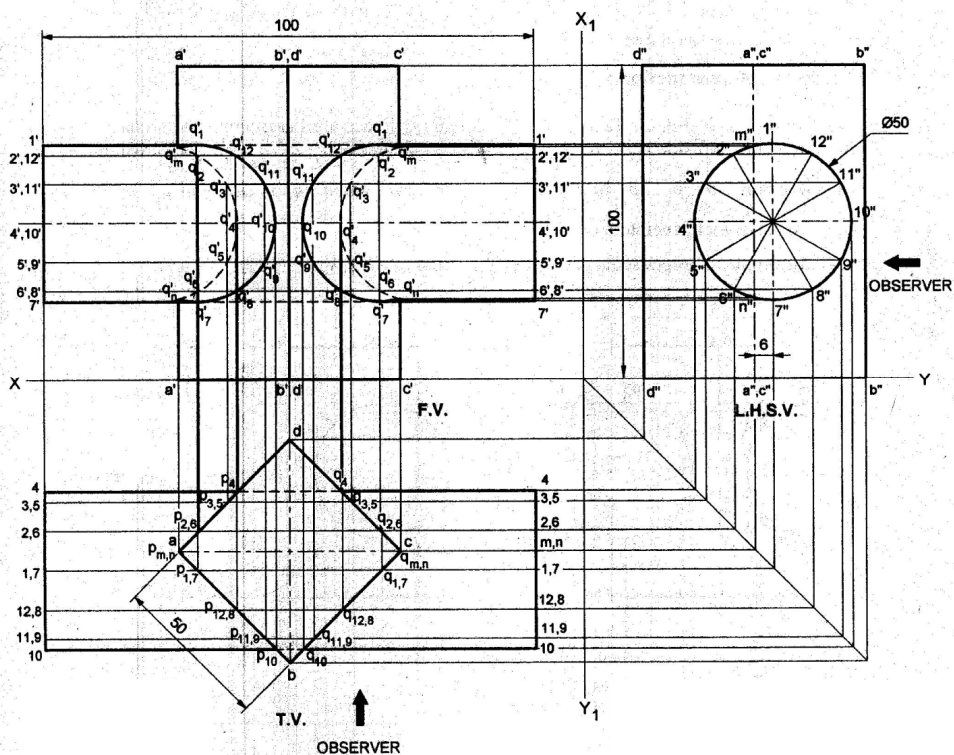**F.V. 04 Marks, T.V. 04 Marks and S.V. 02 Marks**

Q. 3 b)

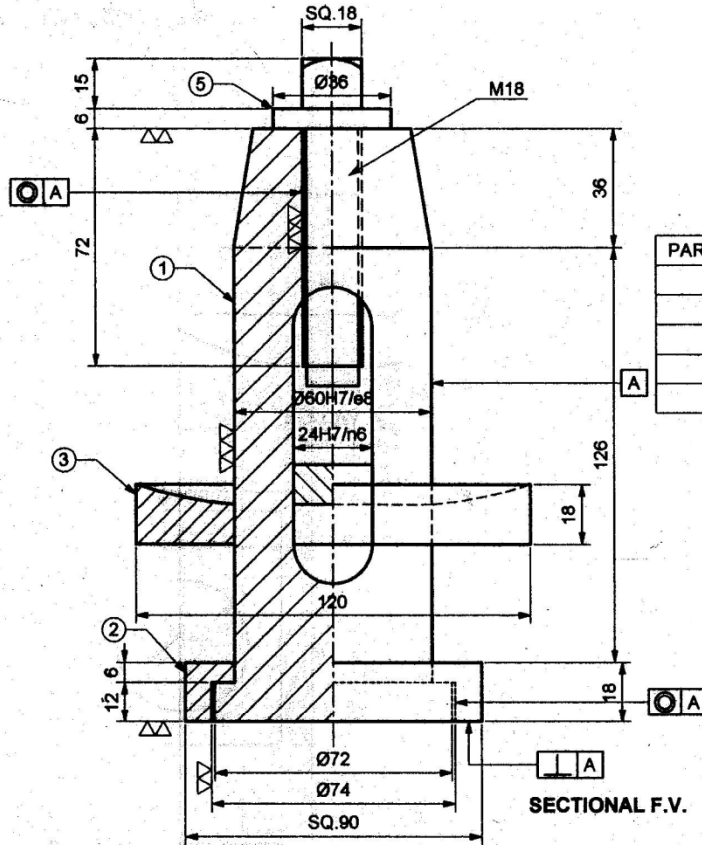**F.V. 04 Marks, T.V. 04 Marks and S.V. 02 Marks**

Q. 3 c)

F.V. 04 Marks, T.V. 04 Marks and S.V. 02 Marks

Q 4 (a)

Sect. F.V. 10 Marks , T.V 06 Marks, Bill of material 02 Marks and 02 marks for type of fit.

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

SECTIONAL F.V.

FIT CHART

24H7/n6	INTERFERENCE FIT
60H7/e8	CLEARANCE FIT
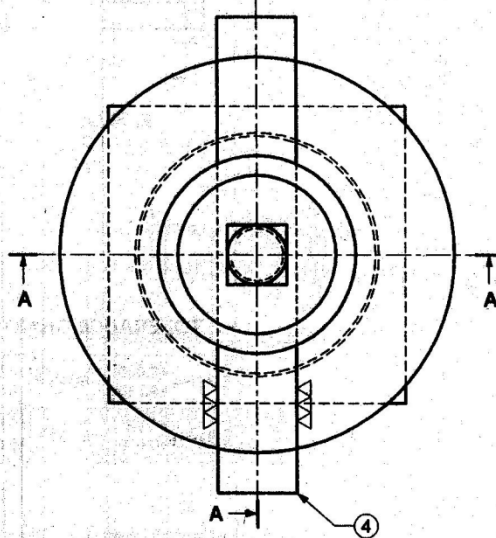
T.V.

ASSEMBLY OF TOOL POST

Q. 4 (b)

Sectional front View 12 marks and Top View 08 Marks

F.V.

T.V.
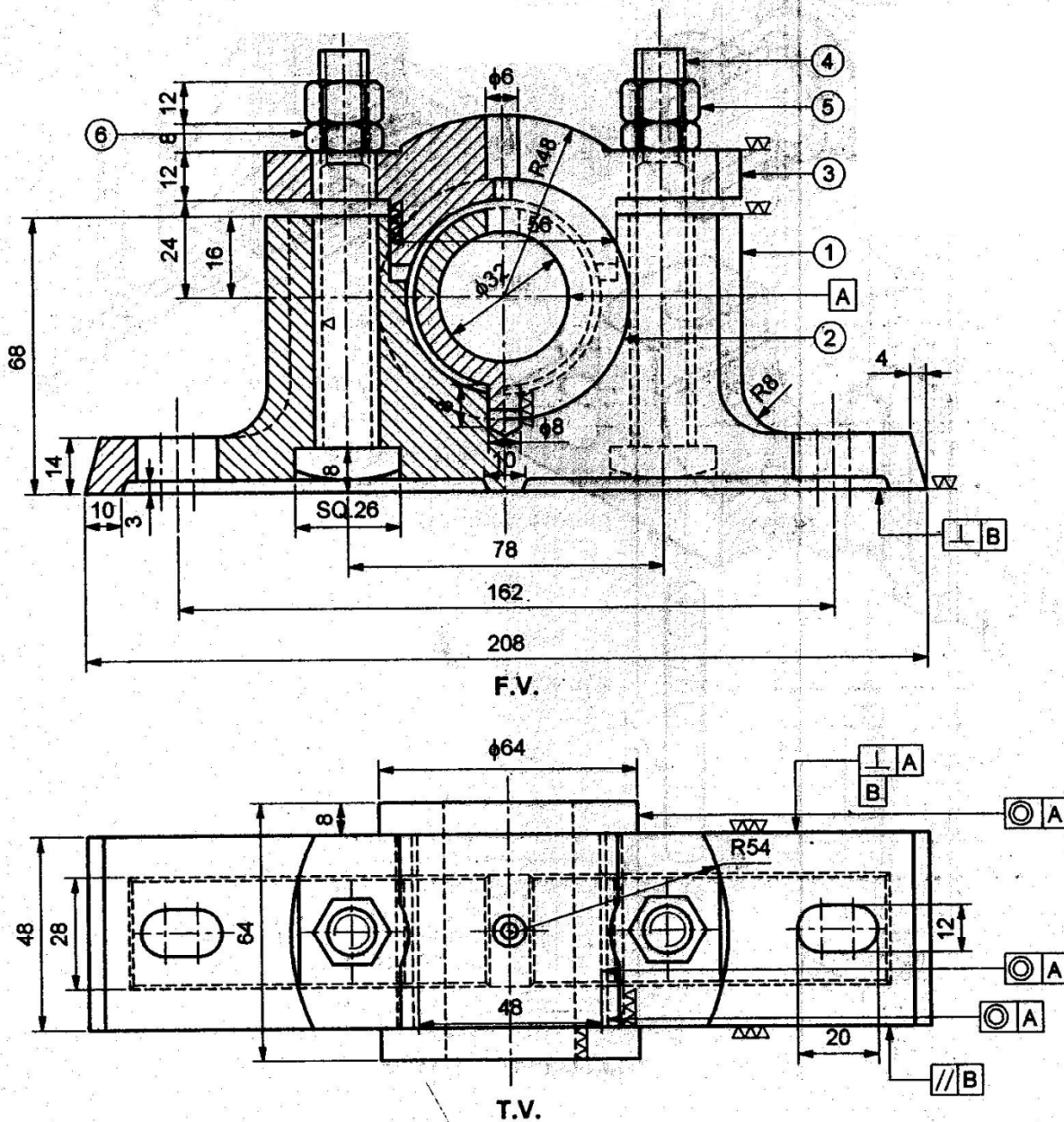
PART LIST

PART NO.	PART NAME	METAL	QTY.
1.	BODY	C.I.	1
2.	BRASS	G.M.	1
3.	CAP	C.I.	1
4.	BOLT	M.S.	2
5.	NUT	M.S.	2
6.	LOCK NUT	M.S.	2

Q 5 (a) For No (i) 06 Marks (ii) 06 Marks (iii) 04 Marks & (iv) 04 Marks

HALF SECTION
ELEVATION

END VIEW

2. PISTON ROD END
(C.I.) 1-OFF

SNUG SLOT
3x3

R20

HALF SECTION
ELEVATION

1. CROSS BODY
(C.I.) 1-OFF

END VIEW

Ø24, 2 HOLES

ELEVATION

END VIEW

3. CAP (C.I.) 1-OFF

BRASSES IN 2 HALVES

HALF SECTION
ELEVATION

4. BRASS
(G.M.) 1-OFF
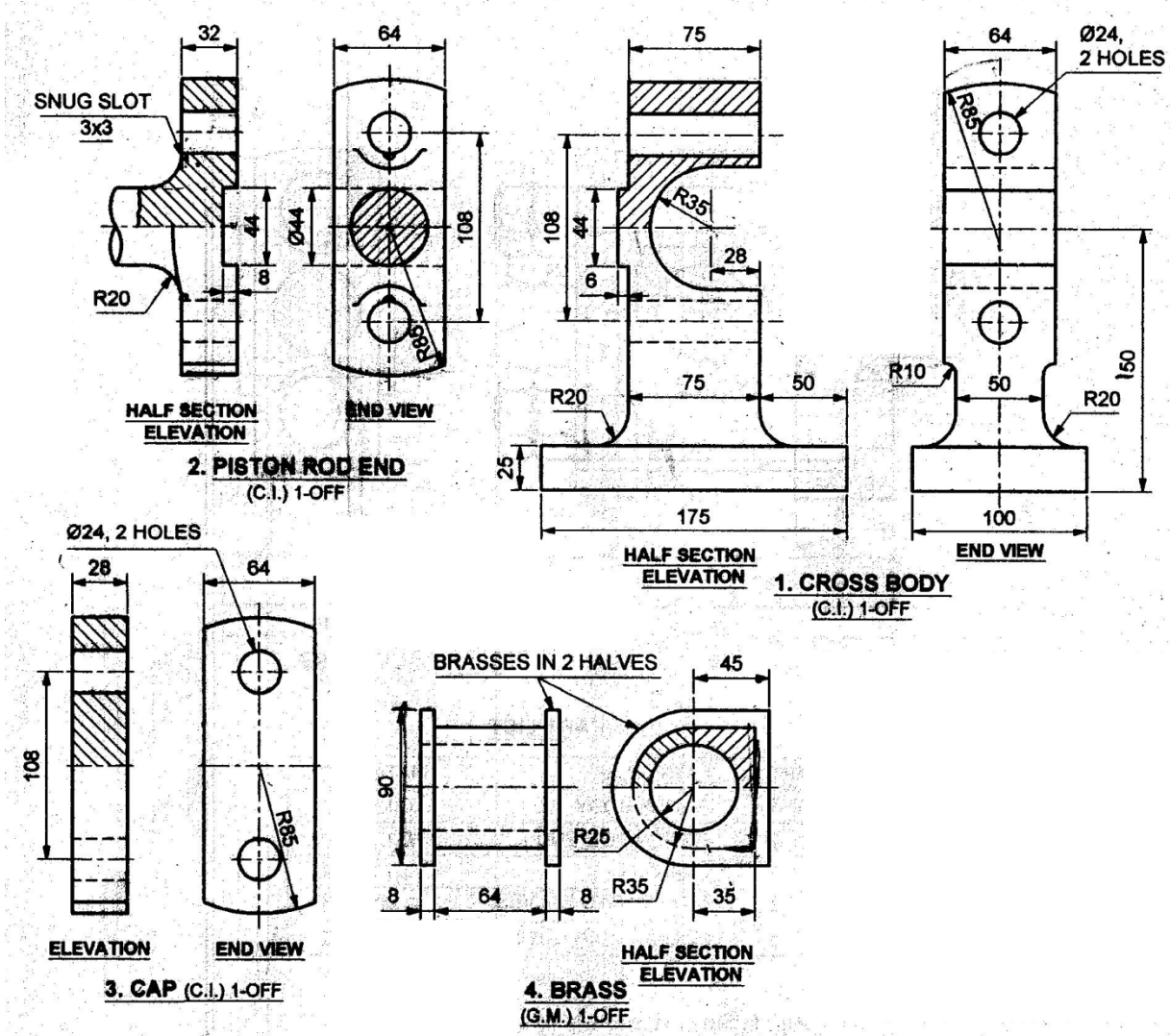
Q 5 (b) For (i) 10 Marks (ii) 04 Marks (iii) 04 marks & (iv) 02 Marks

6 HOLES,
80 PCD, M20

Ø226
Ø144 H7h6
10
15
24
84
Ø150
Ø106
Ø240
Ø120 H7k6
15
15
12
Ø106 H7f7
54
168
15
67
24
24
Ø240
166

1. BODY
C.I. 1-OFF

Ø140
Ø106H7
45°
6
4
54
Ø120 k6

2. VALVE SEAT
G.M. 1-OFF

Ø128
Ø30
7
30
3
45
12
5
56
Ø106 f6

3. VALVE
G.M. 1-OFF
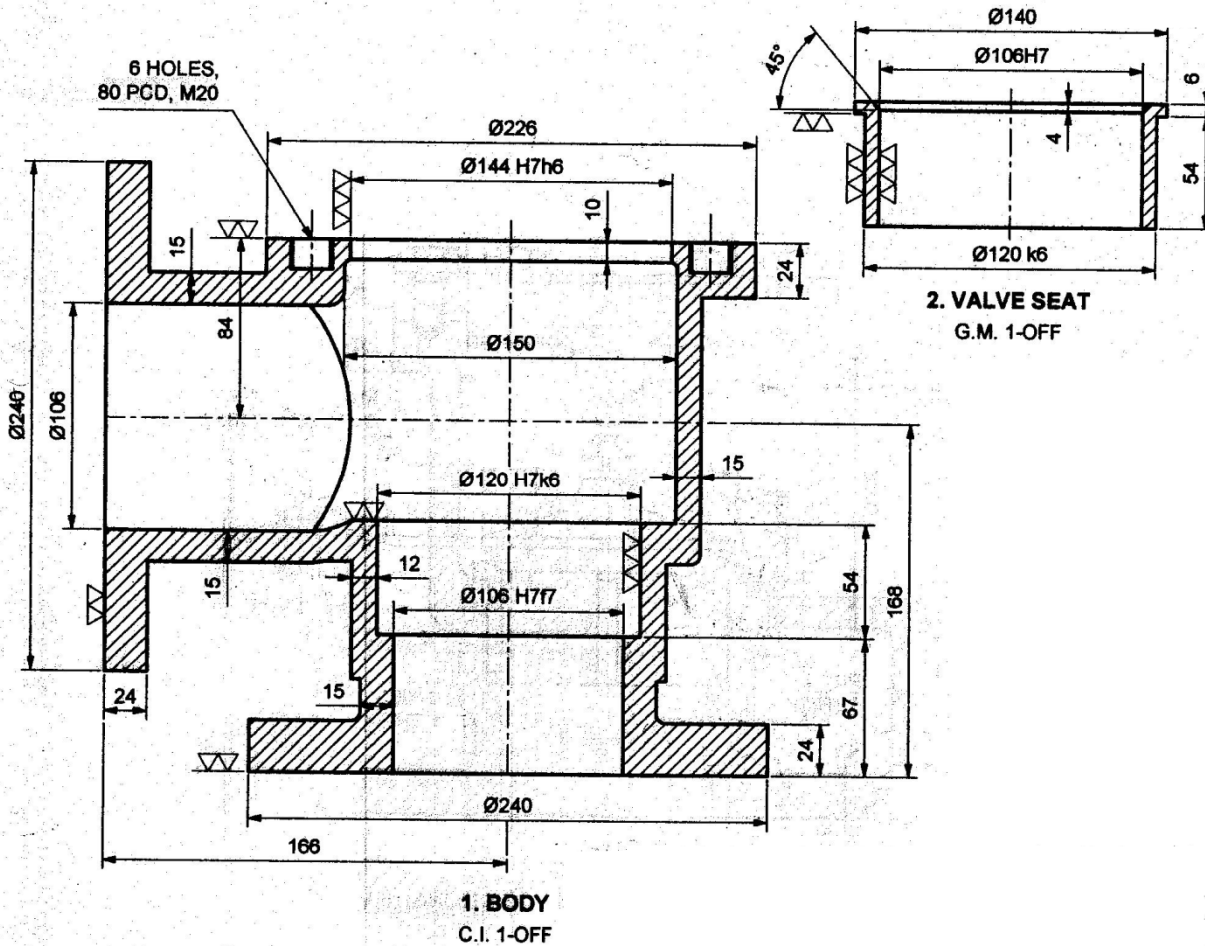
TOLERANCE CHART

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