



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

ENGINEERING GRAPHICS AND DESIGN P2

FEBRUARY/MARCH 2017

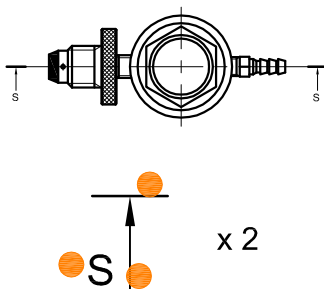
MEMORANDUM

MARKS: 100

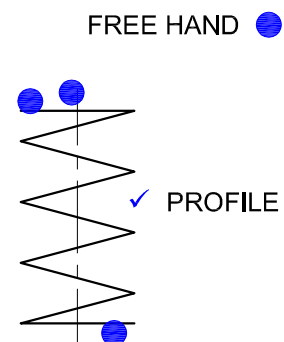
This memorandum consists of 5 pages.

ANSWERS		
1	GAS REGULATOR	1
2	www.theonegas.co.za	1
3	MILLING	1
4	AUTOCAD 2016	1
5	2015-10-31	1
6	SOON	1
7	RUBBER	1
8	FULL SECTIONED FRONT VIEW	1
9	FILLET	1
10	B: Ø 17.6 C: 125 D: 75	3
11	75°	1
12	THIN PART / RUBBER	1
13	PART SECTIONING	1
14	KNURLING	1
15	CAP	1
16	8	1
17	TO KEEP THE RUBBER PIPE IN POSITION	2
18	<i>See below</i>	3
19		3
20		4
TOTAL		30

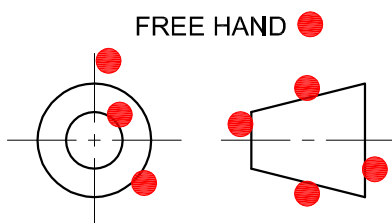
ANSWER 18

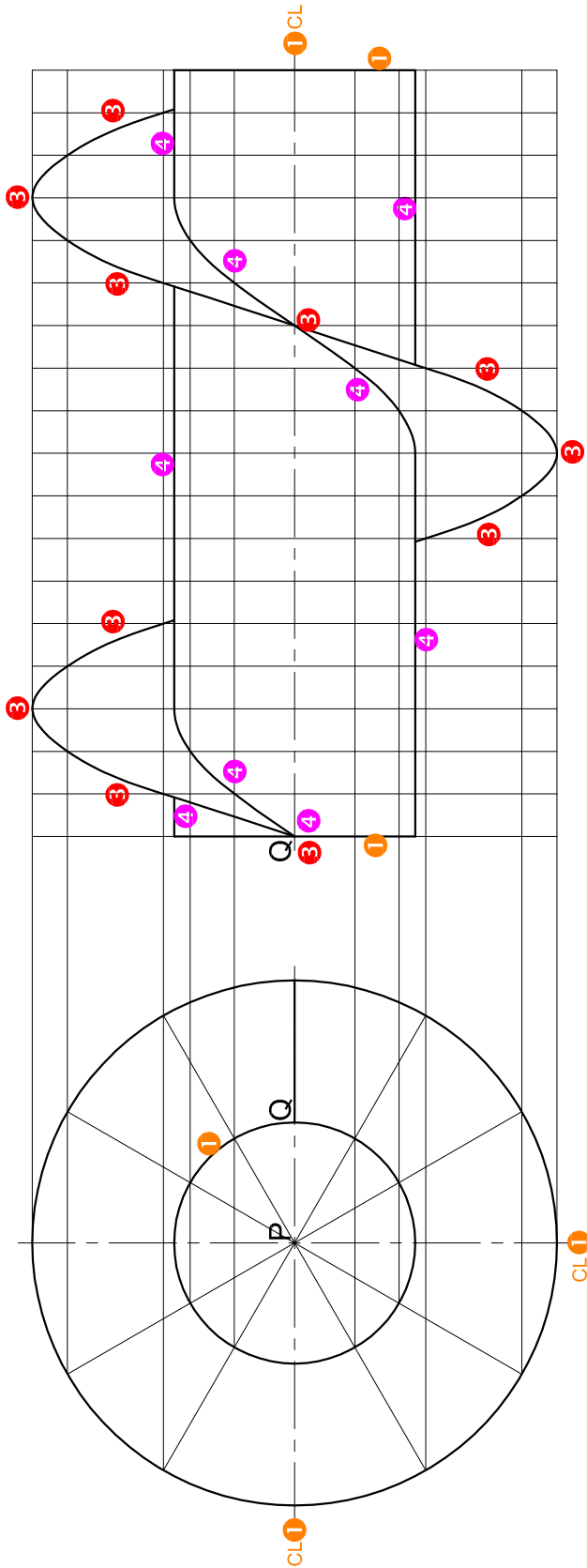


ANSWER 19: CONVENTION - COIL SPRING



ANSWER 20: PROJECTION SYMBOL



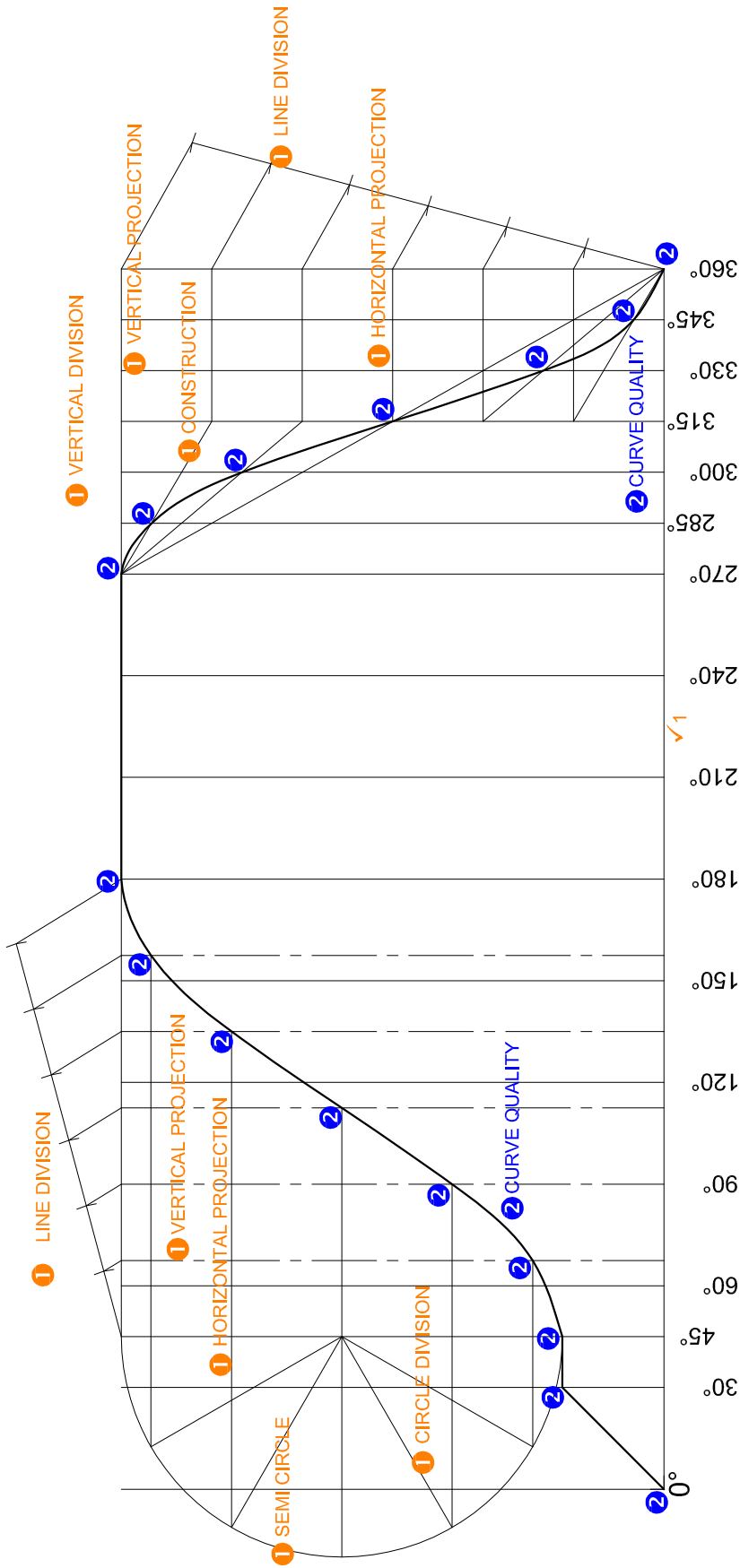


5 ✓✓ CURVE QUALITY FOR BOTH HELICES

- 2. CONSTRUCTION**
- OUTER CIRCLE (NOMINAL DIAMETER) 1
 - STARTING POSITION ON Q 1
 - CIRCLE DIVISION 1
 - PITCH + LINE DIVISION 2
 - VERTICAL PROJECTION 1
 - HORIZONTAL PROJECTION 1
 - DIRECTION 1
-
- 8

PAPER 2 QUESTION 2.1
 GRADE 12
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 MEMORANDUM

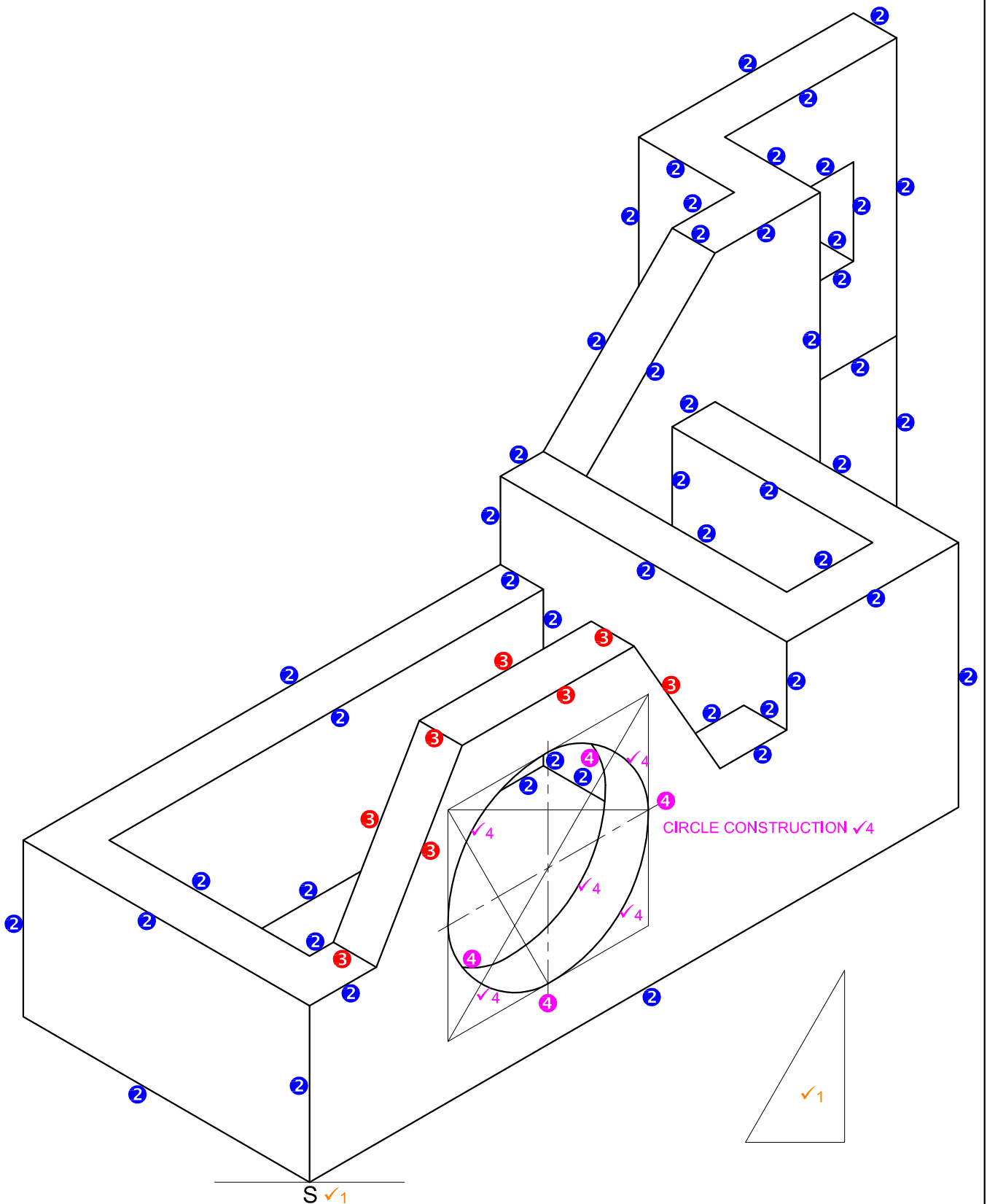
ASSESSMENT CRITERIA 2.1	
1	GIVEN + CENTRE LINES 3
2	CONSTRUCTION 8
3	OUTER HELIX 5 1/2
4	INNER HELIX + SHAFT 4 1/2
5	CURVE QUALITY 2
SUBTOTAL 23	



GRAPH OF DISPLACEMENT **3**
 HORIZONTAL SCALE - 180mm = 360° **3**

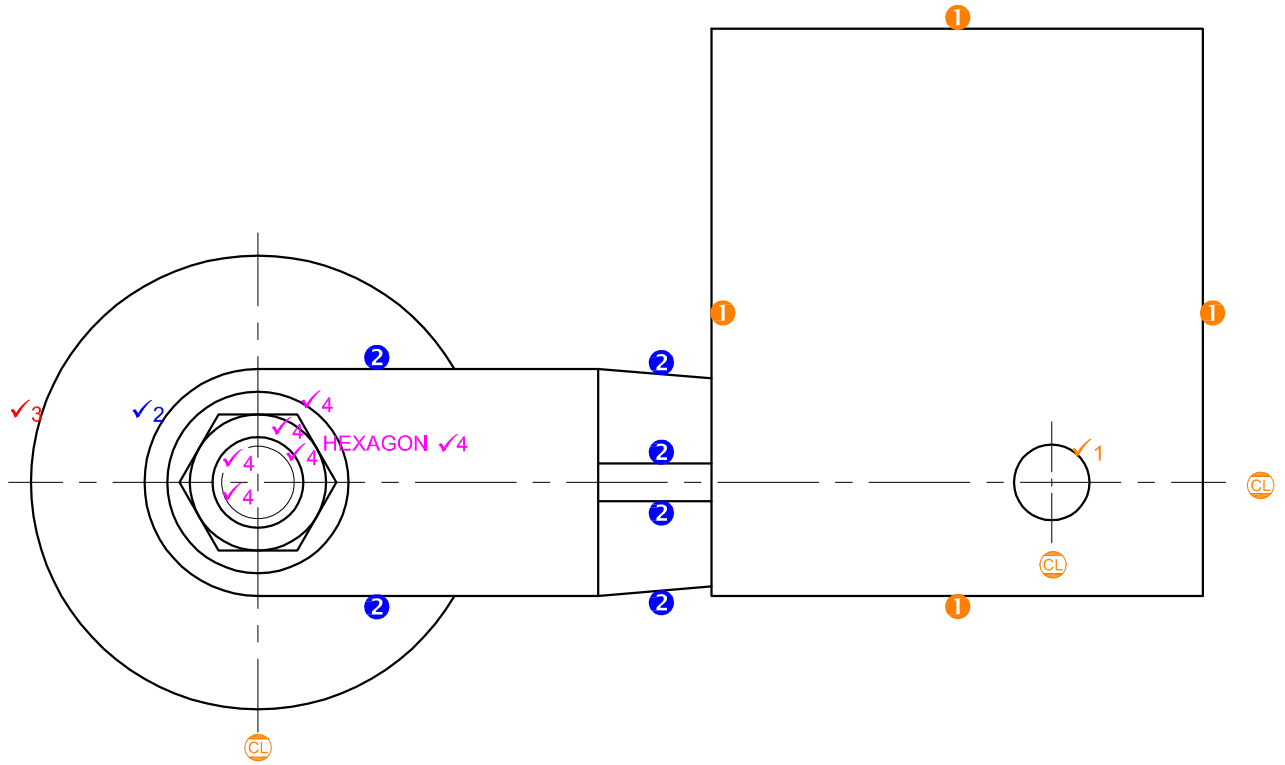
PAPER 2 QUESTION 2.2
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ASSESSMENT CRITERIA 2.2	
1	CONSTRUCTION
2	POINTS + CURVES
3	LABELS
PENALTIES (-)	
SUBTOTAL 16	



ASSESSMENT CRITERIA		
1	AUXILIARY VIEW + PLACEMENT	2
2	FRONT + REAR SECTION	25
3	HEXAGON	4
4	CIRCLE + CL	8
TOTAL		39

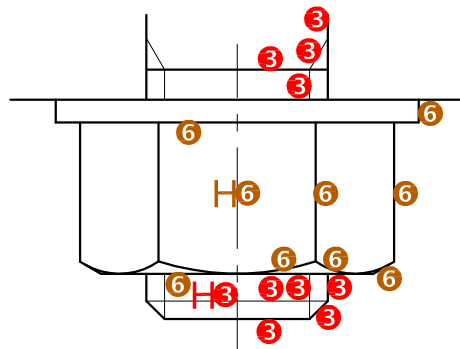
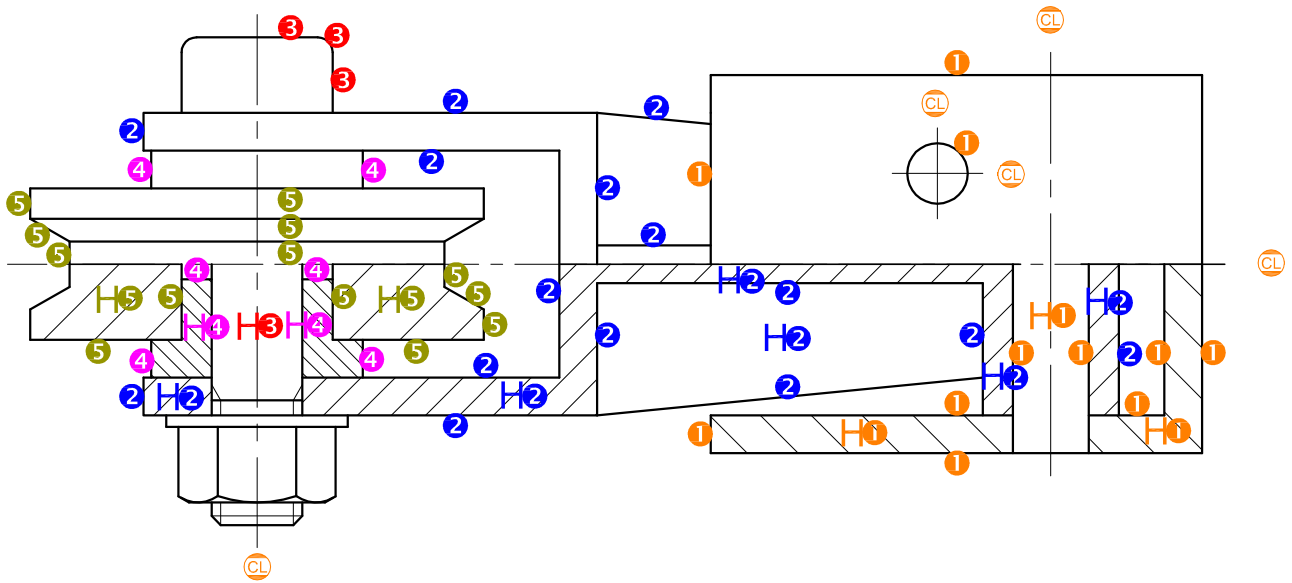
PAPER 2 QUESTION 3
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 Feb./Mar. 2017
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1 MARK FOR EVERY
COMPONENT CORRECTLY
ASSEMBLED (10 PARTS - 1) = 9

ASSESSMENT CRITERIA		
FRONT VIEW		
1	HOUSING + PIN	3
2	FORK	4
3	PULLEY	1
4	M12 BOLT + WASHER + M12 NUT	6
SUBTOTAL		14

PAPER 2 QUESTION 4
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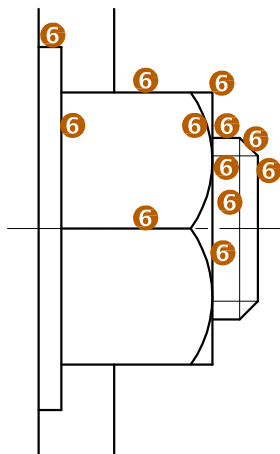
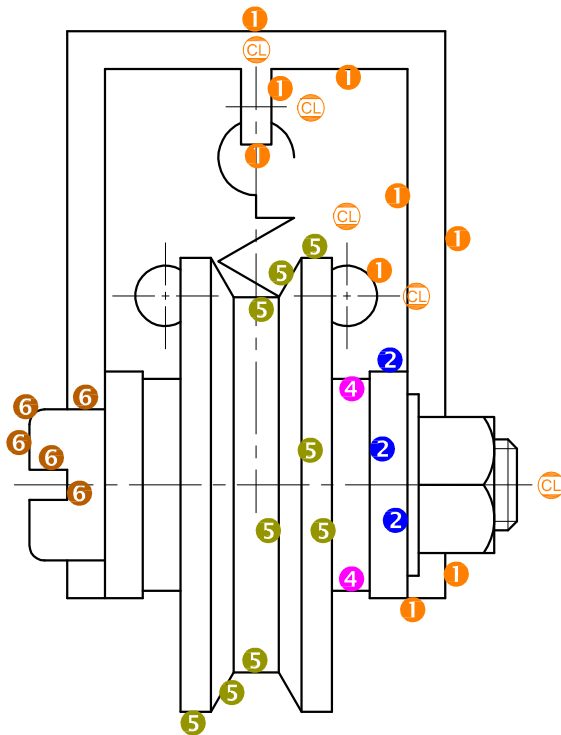
DETAIL OF MARK ALLOCATION FOR WASHER, M12 NUT AND M12 BOLT

ASSESSMENT CRITERIA		
SECTIONAL TOP VIEW		
1	HOUSING + PIN	7
2	FORK	10 $\frac{1}{2}$
3	M12 BOLT	7
4	BUSH	4
5	PULLEY	7 $\frac{1}{2}$
6	WASHER + M12 NUT	4 $\frac{1}{2}$
SUBTOTAL		40 $\frac{1}{2}$

PAPER 2 QUESTION 4
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3. SPRING MARK ALLOCATION

FREEHAND	1
TOP CURVE	2
SPRING PROFILE	1
	2



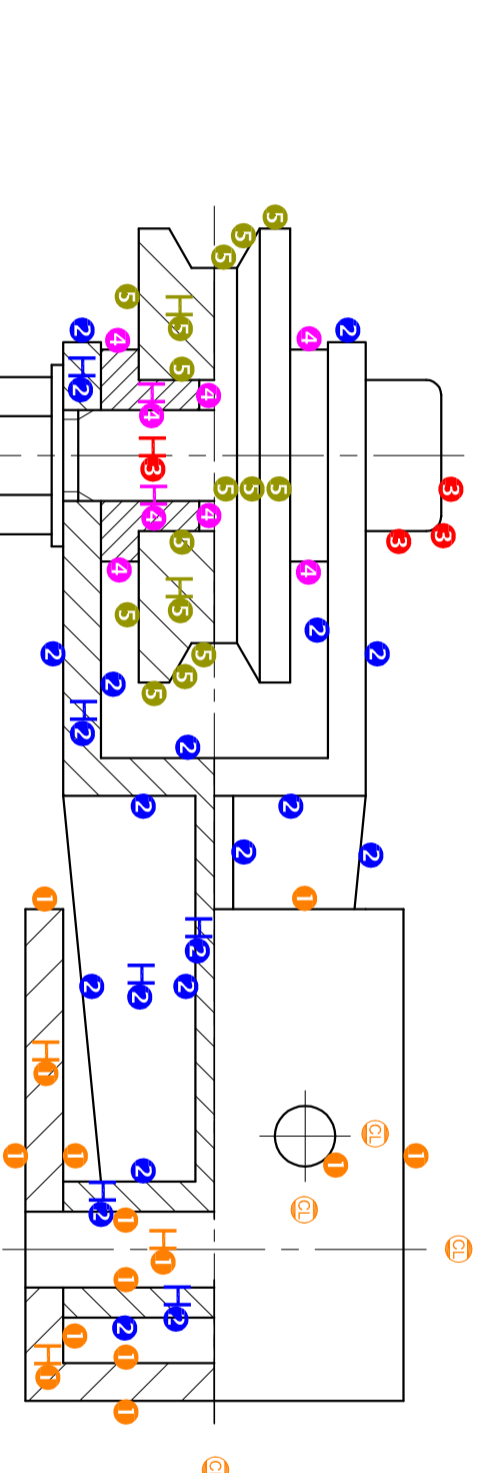
DETAIL OF MARK ALLOCATION FOR WASHER, M12 NUT AND M12 BOLT

ASSESSMENT CRITERIA		
LEFT VIEW		
1	HOUSING	4 1/2
2	FORK	1 1/2
3	SPRING	2
4	BUSH	1
5	PULLEY	4 1/2
6	M12 BOLT + WASHER + M12 NUT	8 1/2
SUBTOTAL		22

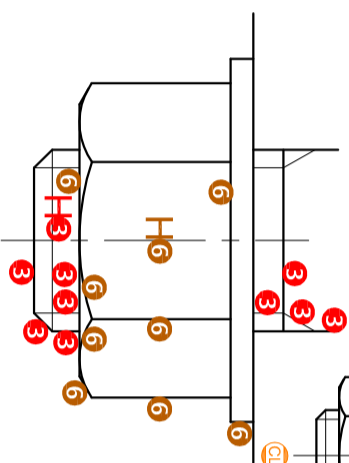
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FOR OFFICIAL USE ONLY	
INCORRECT ORTHOGRAPHIC PROJECTION	
INCORRECT SCALE	
INCORRECT HATCHING	
PARTS NOT ASSEMBLED	
TOTAL	

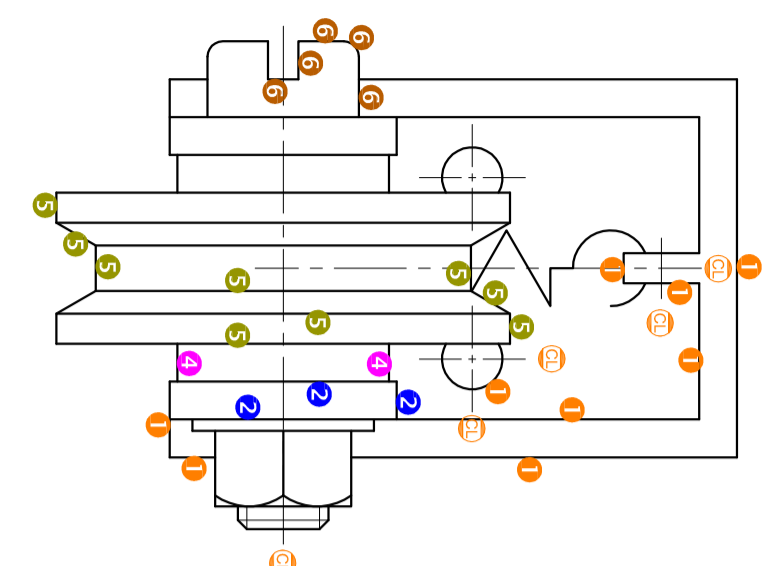
TOTAL	
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ASSESSMENT CRITERIA	
FRONT VIEW	
1 HOUSING + PIN	3
2 FORK	4
3 PULLEY	1
4 M12 BOLT + WASHER + M12 NUT	6
SUBTOTAL	14



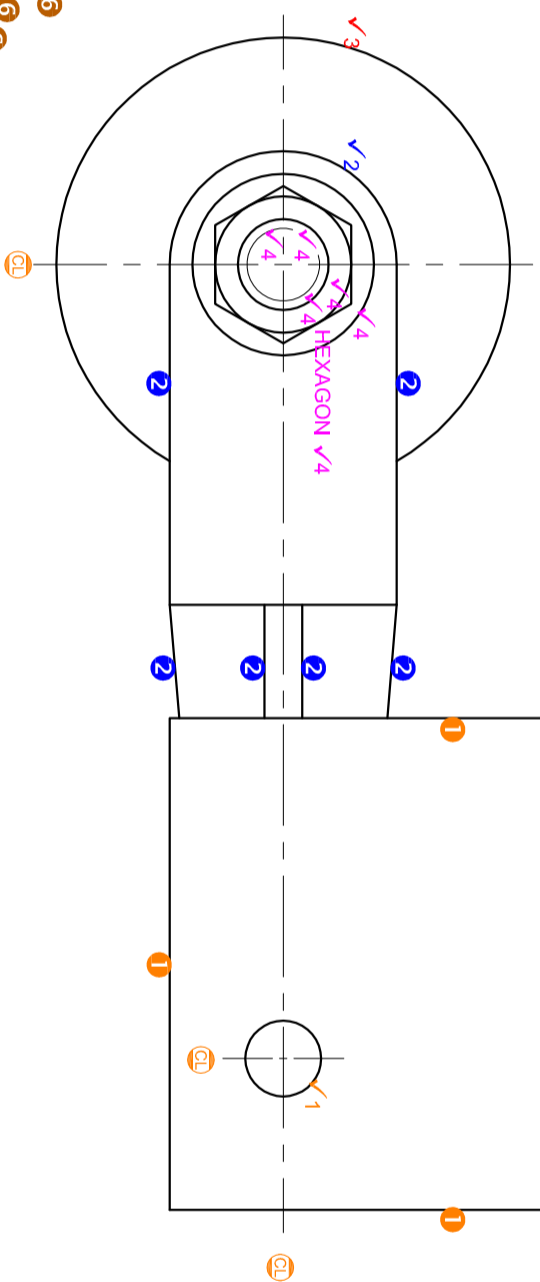
SECTIONAL TOP VIEW	
1 HOUSING + PIN	7
2 FORK	10 1/2
3 M12 BOLT	7
4 BUSH	4
5 PULLEY	7 1/2
6 WASHER + M12 NUT	4 1/2
SUBTOTAL	40 1/2



3. SPRING MARK ALLOCATION
 FREEHAND
 TOP CURVE
 SPRING PROFILE

1 1 1 1 1 1
 2

DETAIL OF MARK ALLOCATION FOR WASHER, M12 NUT AND M12 BOLT



DETAIL OF MARK ALLOCATION FOR WASHER, M12 NUT AND M12 BOLT

1 MARK FOR EVERY COMPONENT CORRECTLY ASSEMBLED (10 PARTS - 1) = 9

LEFT VIEW	
1 HOUSING	4 1/2
2 FORK	1 1/2
3 SPRING	2
4 BUSH	1
5 PULLEY	4 1/2
6 M12 BOLT + WASHER + M12 NUT	8 1/2
SUBTOTAL	22

GENERAL	
1 CENTRE LINES	6 1/2
2 ASSEMBLY	9
SUBTOTAL	15 1/2
TOTAL	92

GRAND TOTAL	
EXAMINATION NUMBER	
EXAMINATION NUMBER	
EXAMINATION NUMBER	6