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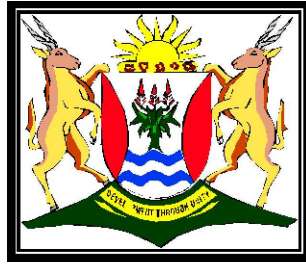
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EASTERN CAPE EDUCATION DEPARTMENT
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NATIONAL SENIOR CERTIFICATE

GRADE 12

ENGINEERING GRAPHICS AND DESIGN P2

SEPTEMBER 2021

**PREPARATORY EXAMINATION
MARKING GUIDELINE**

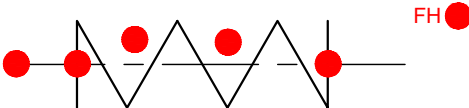
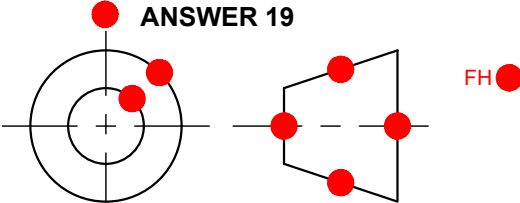
MARKS: 200

TIME: 3 hours

This marking guideline consists of 7 pages.

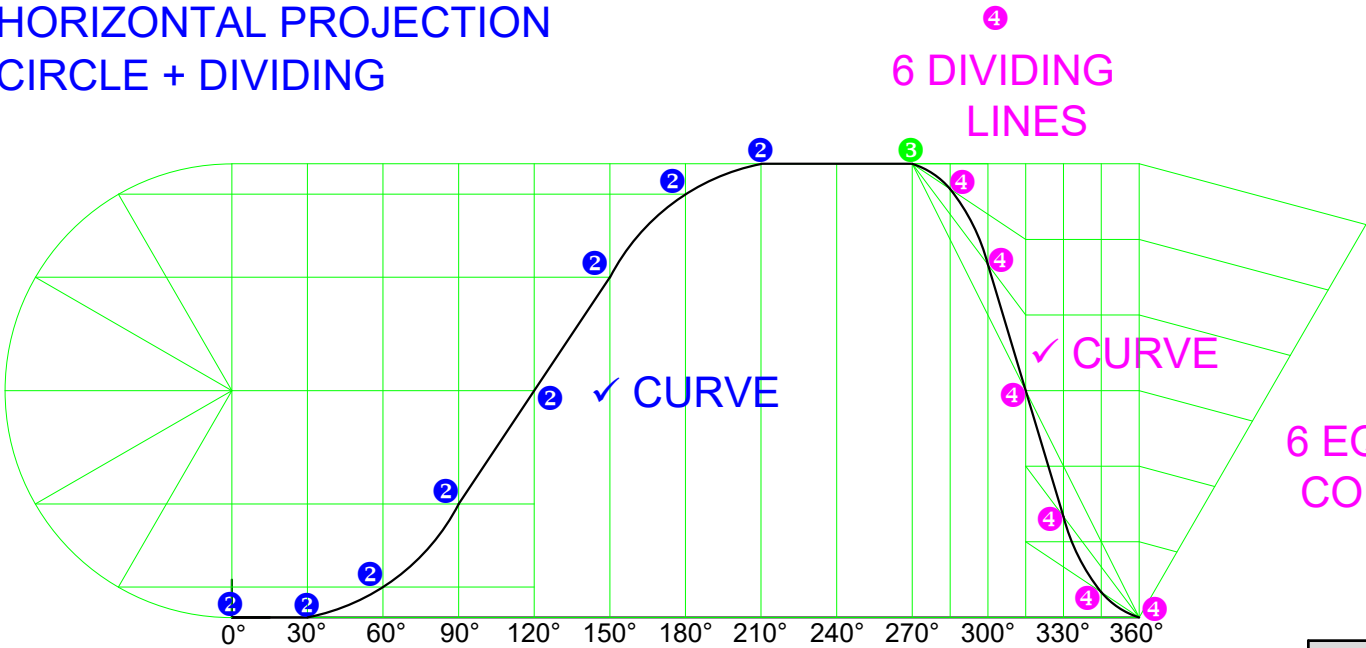
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QUESTION 1: ANALYTICAL (MECHANICAL)

ANSWERS		
1	OREGON MECHANICAL MANUFACTURES	1
2	5 LEOPOLD STREET	1
3	DHLABA	1
4	S-BREAK	1
5	10	1
6	$300 \times 3 = 900$	2
7	KNURLING (DIAMOND)	1
8	HALF SECTION	1
9	PART SECTION	1
10	PITCH CIRCLE DIAMETER	1
11	6	1
12	$\varnothing 10,1$	1
13	COIL SPRING AND HOLES IN JAWS. NO.	2
14	TAPER	1
15	DEPTH OF THREAD	1
16	$4\frac{1}{2}$	1
17	2015. THE DESIGN IS COPY PROTECTED.	2
18		3
19		4
TOTAL		27
ANSWER 18		
		
ANSWER 19		
		

QUESTION 2.1: LOKUS (CAM)

- ✓ HORIZONTAL PROJECTION
- ✓ CIRCLE + DIVIDING

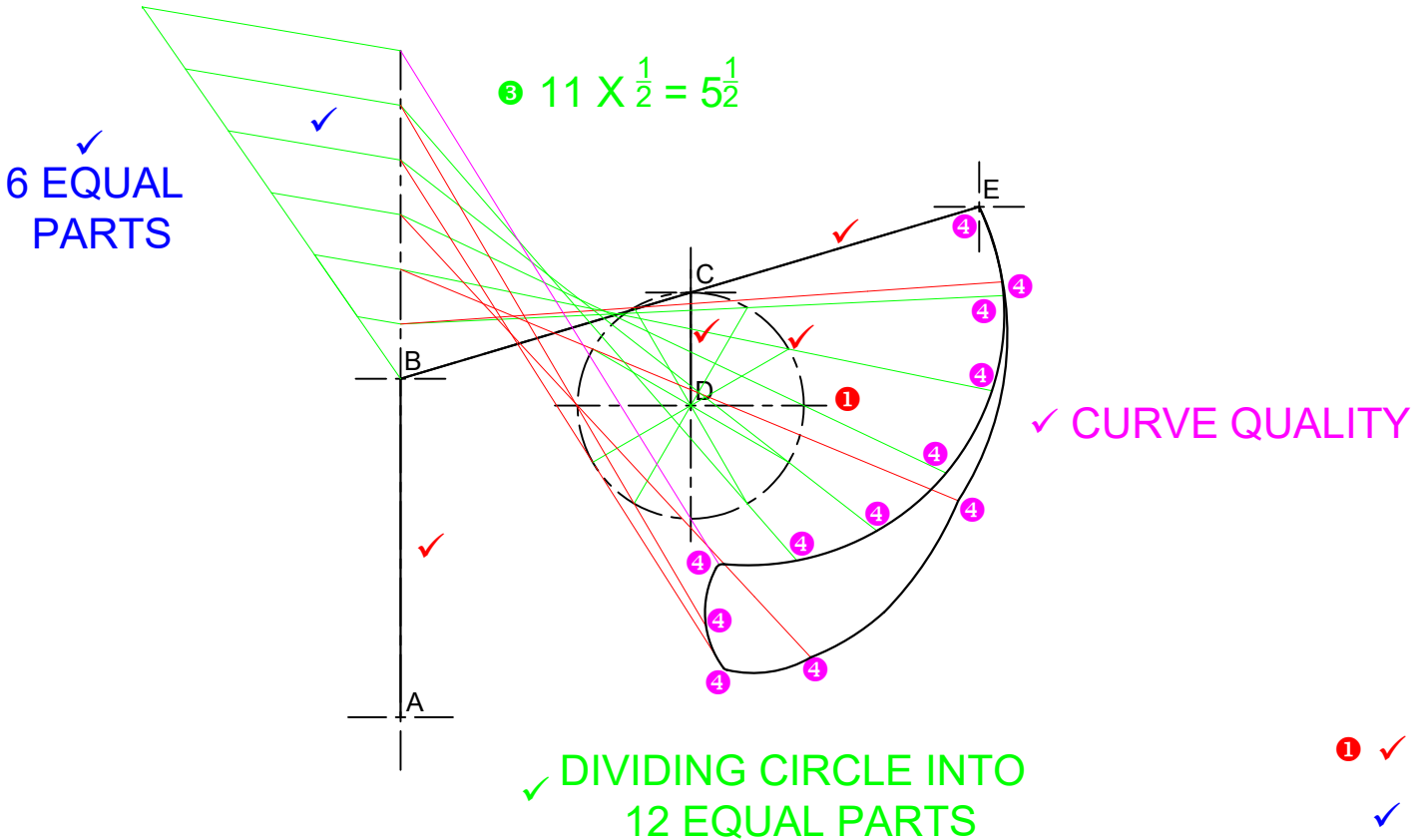


5 CAM DISPLACEMENT DIAGRAM
5 SCALE 360° = 120 MM

- ✓ 120MM
- ✓ DIVIDED INTO 12 EQUAL PARTS

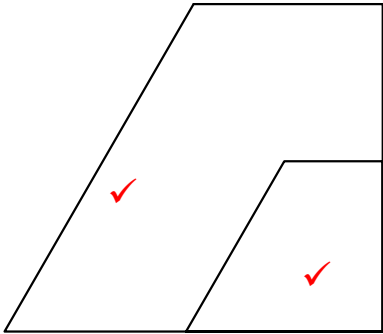
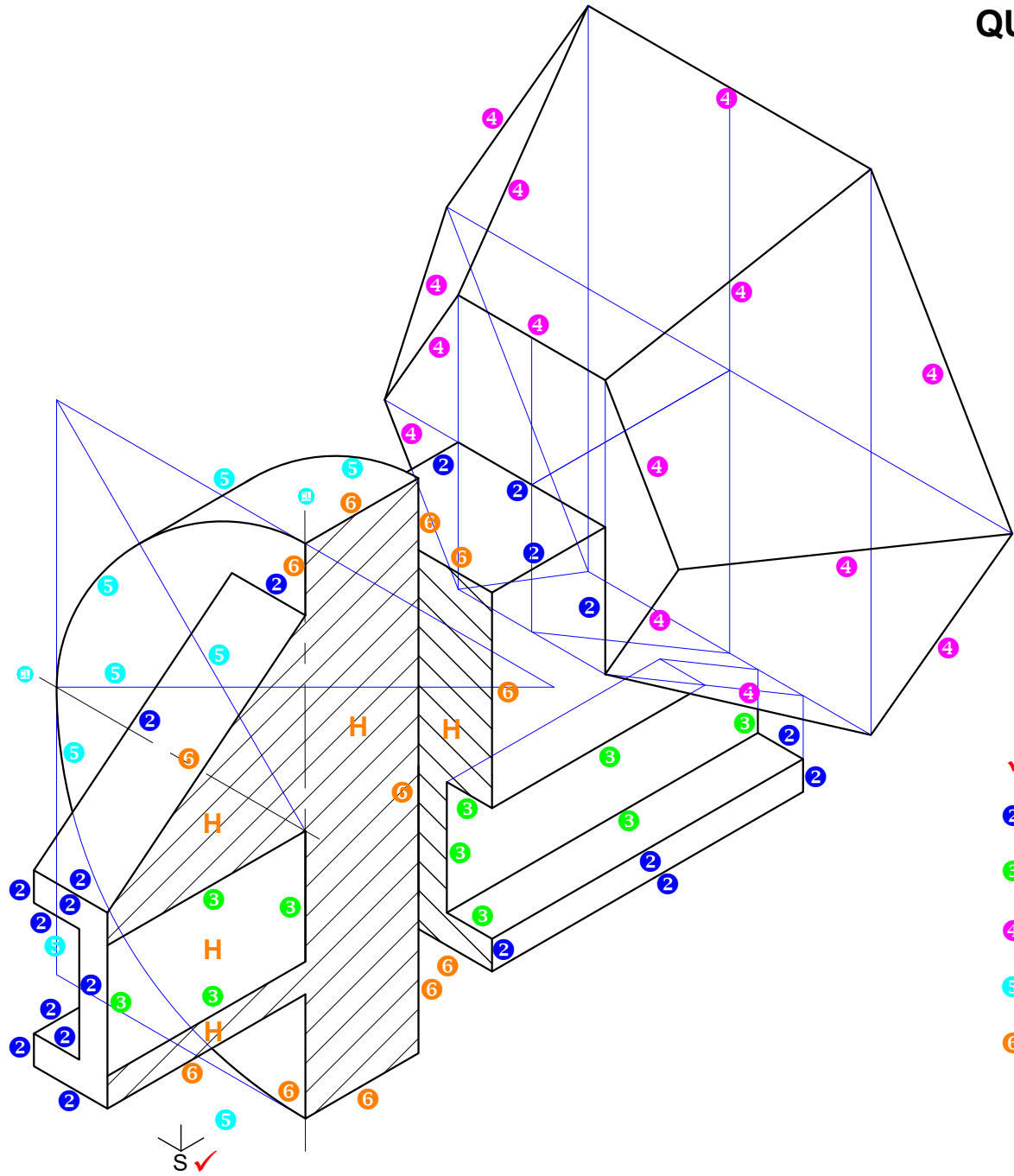
ASSESSMENT CRITERIA		
✓ 1	CONSTRUCTION	2
✓ 2	1ST DWELL + SIMPLE HARMONIC	7
3	2ND DWELL	1/2
✓ 4	ACCELERATION AND RETARDATION	6 1/2
5	LABEL + SCALE	1
SUB-TOTAL 2.1		17
		3

QUESTION 2.2: LOCI (MEGANISMES)



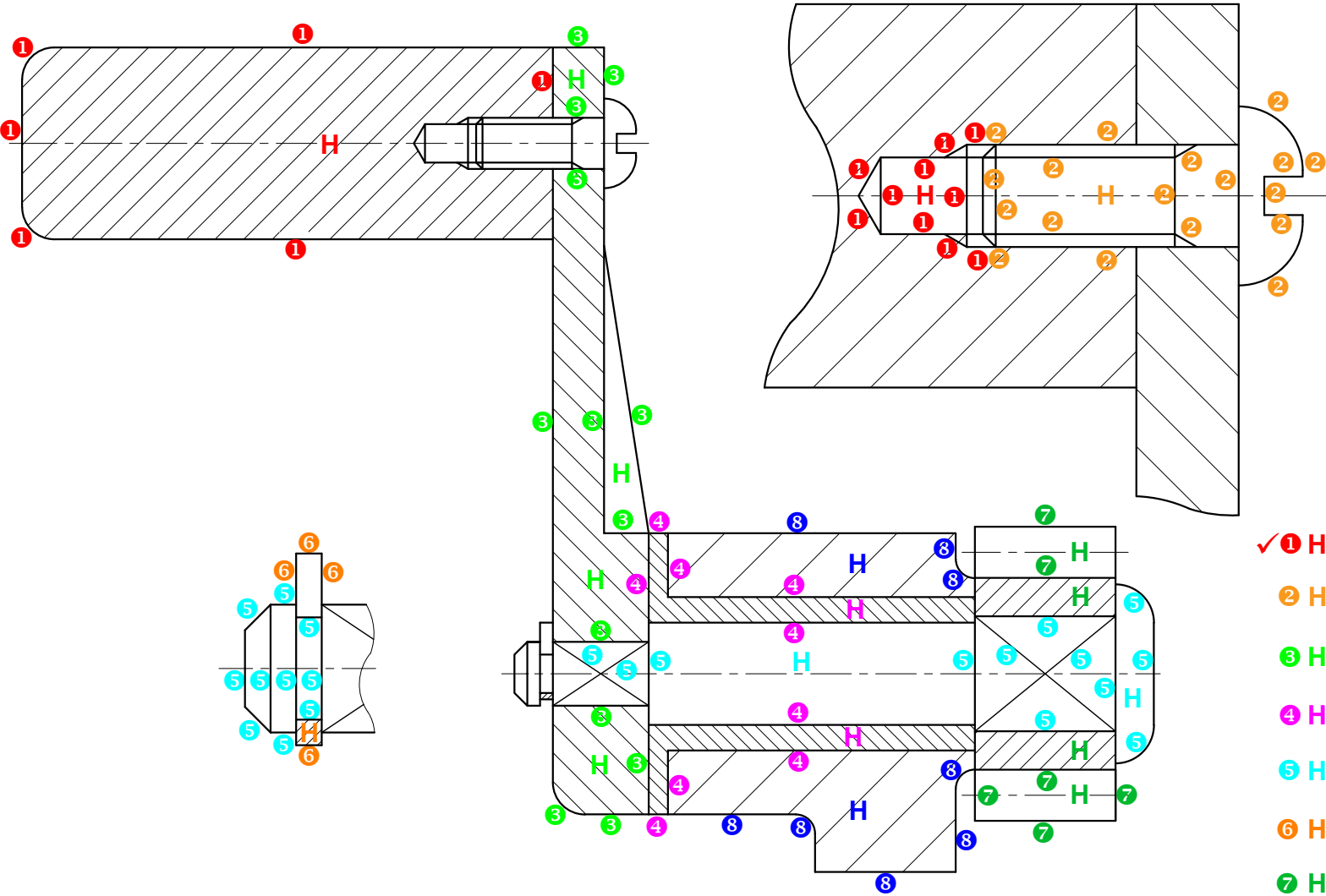
ASSESSMENT CRITERIA		
1 ✓	1 CONSTRUCTION OF DIAGRAM	4½
✓	2 CONSTRUCTION OF 6 EQUAL PARTS	2
3 ✓	3 CONSTRUCTION OF LOCI	5½
4 ✓	4 LOCI OF POINT E	7
SUB-TOTAL 2.2		19
		4

QUESTION 3: ISOMETRIC



ASSESSMENT CRITERIA		
1	CONSTR' + PLACEMENT	3
2	ISOMETRIC LINES	10
3	RIB	5
4	HEXAGON	7
5	HALF CIRCLE	3½
6	SECTION + HATCHING	8½
TOTAL		37
		5

QUESTION 4: MECHANICAL ASSEMBLY
HALF SECTIONAL FRONT VIEW OF CUTTING PLANE A-A

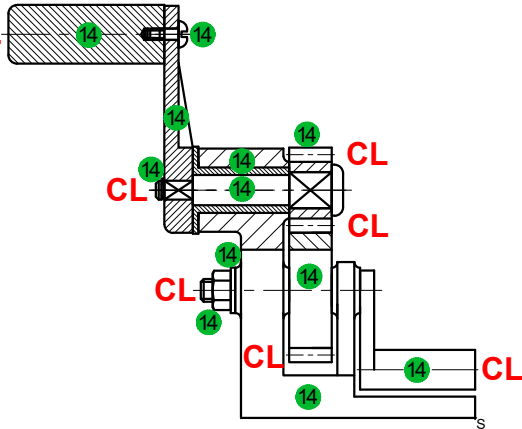
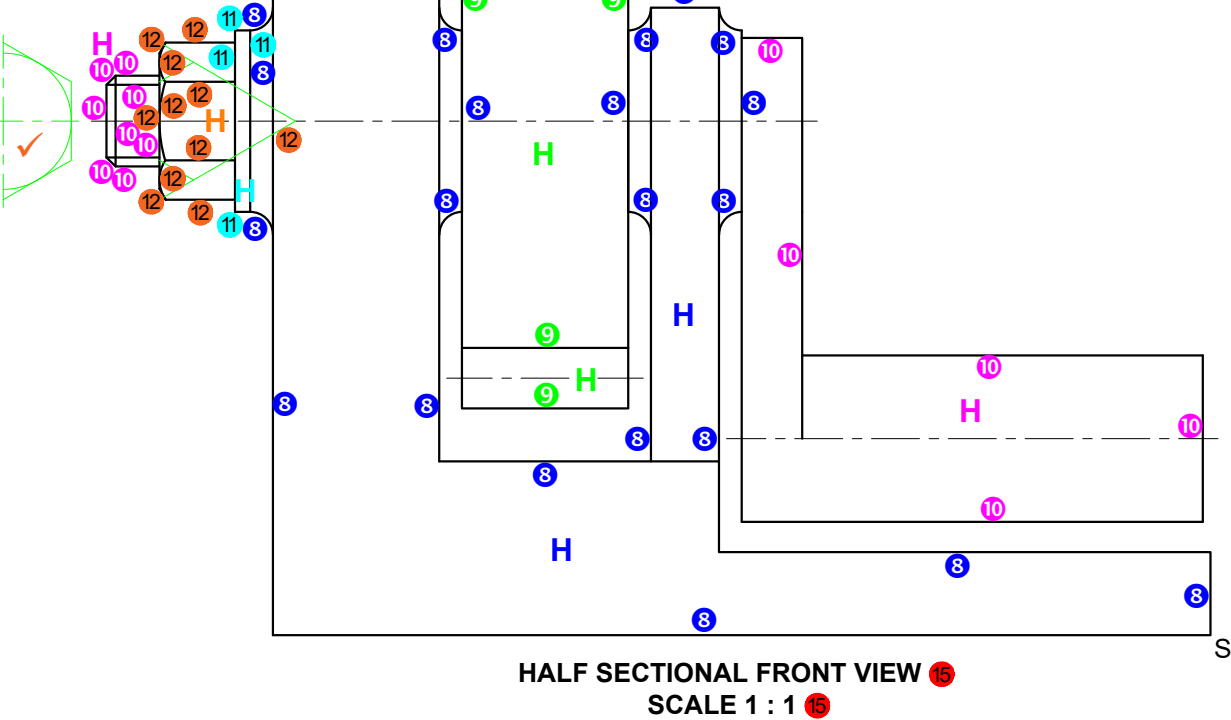


ASSESSMENT CRITERIA		
HALF SECTIONAL FRONT VIEW (TOP)		
1	HANDLE	9
2	SCREW	9½
3	CRANK	8½
4	BUSH	5½
5	SHAFT	12
6	CIRCLIP	2½
7	INTPUT GEAR	5
8	HOUSING (TOP PART)	5

- ✓ 1 H
- 2 H
- 3 H
- 4 H
- 5 H
- 6 H
- 7 H
- 8 H

6

QUESTION 4: MECHANICAL ASSEMBLY
HALF SECTIONAL FRONT VIEW OF CUTTING PLANE A-A



ASSESSMENT CRITERIA		
HALF SECTIONAL FRONT VIEW (BOTTOM)		
8 H	8 HOUSING (BOTTOM PART)	11½
9 H	9 OUTPUT GEAR	4
10 H	10 CRANKSHAFT	7½
11 H	11 WASHER	2½
✓ 12 H	12 M12 NUT	7
CL	13 CENTRE LINES	3½
✓ 14	14 ASSEMBLY	6
15	15 LABEL AND SCALE	1
TOTAL		100
		7