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# basic education

Department:  
Basic Education  
**REPUBLIC OF SOUTH AFRICA**

## **SENIOR CERTIFICATE EXAMINATION/ NATIONAL SENIOR CERTIFICATE EXAMINATION**

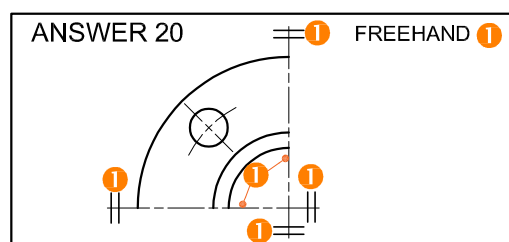
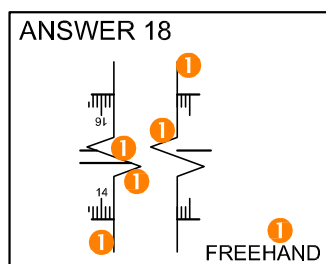
### **ENGINEERING GRAPHICS AND DESIGN P2**

**2023**

### **MARKING GUIDELINES**

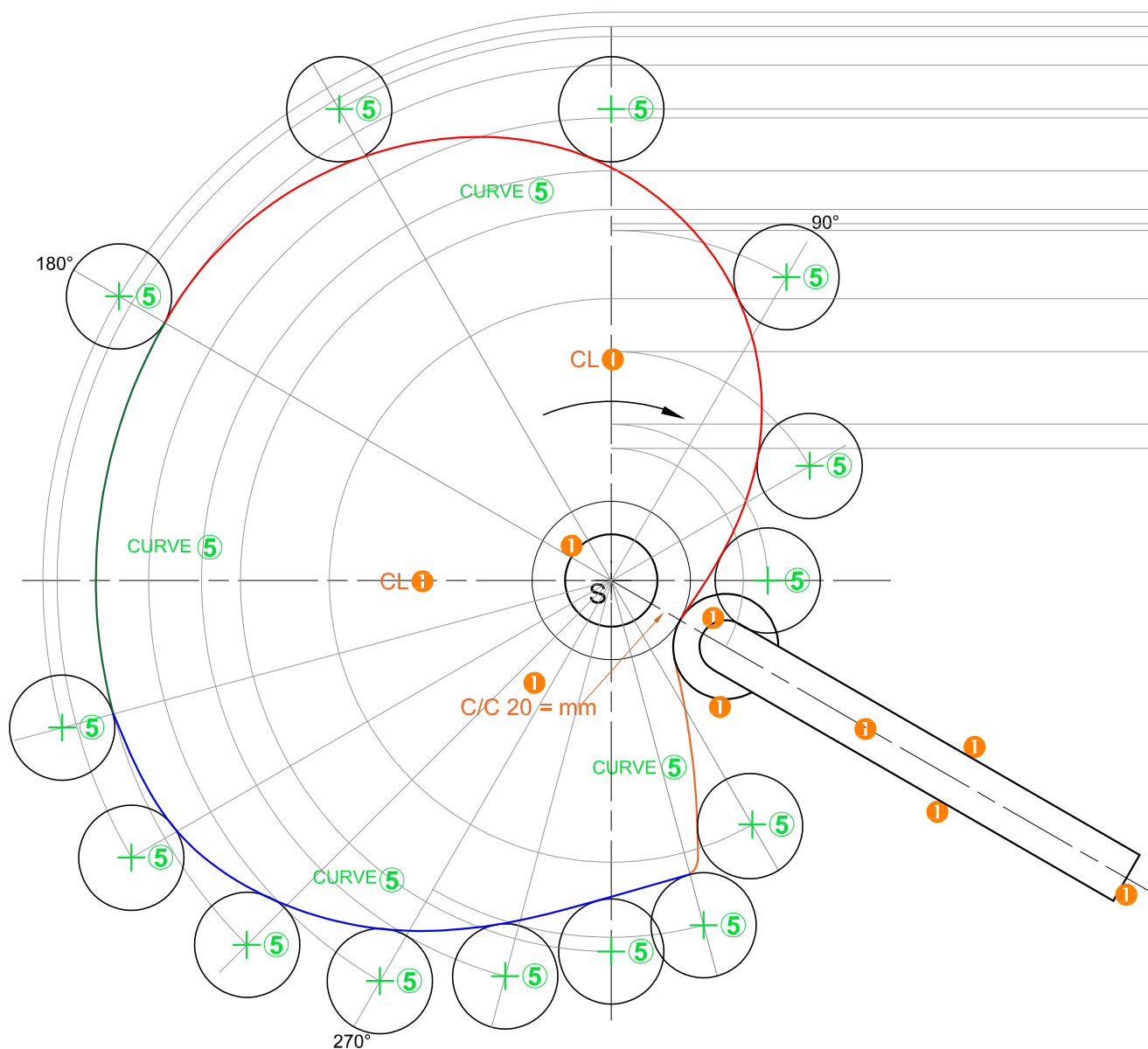
**These marking guidelines consist of 7 pages.**

ANSWERS		
1	LISA	1
2	DRAWING NUMBER	1
3	COMBINATION SQUARE	1
4	PRECISION TOOLS	1
5	20 °C	1
6	GLASS	1
7	3000	1
8	THIRD ANGLE	1
9	SECTIONAL RIGHT VIEW	1
10	MULTI PLANE / OFF SET	1
11	REVOLVED	1
12	REMOVED	1
13	C: 17                      D: 111                      E: 14	3
14	9	1
15	DETAIL T	1
16	KNURLING	1
17	103,025 (MAX.) 102,95 (MIN.)	2
18	See below	3
19	L / =	1
	G / N7	1
	J / HONE	1
	H / 2	1
20	See below	3
<b>TOTAL</b>		<b>30</b>



PAPER 2 QUESTION 1  
GRADE 12  
JUNE 2023  
MARKING GUIDELINE

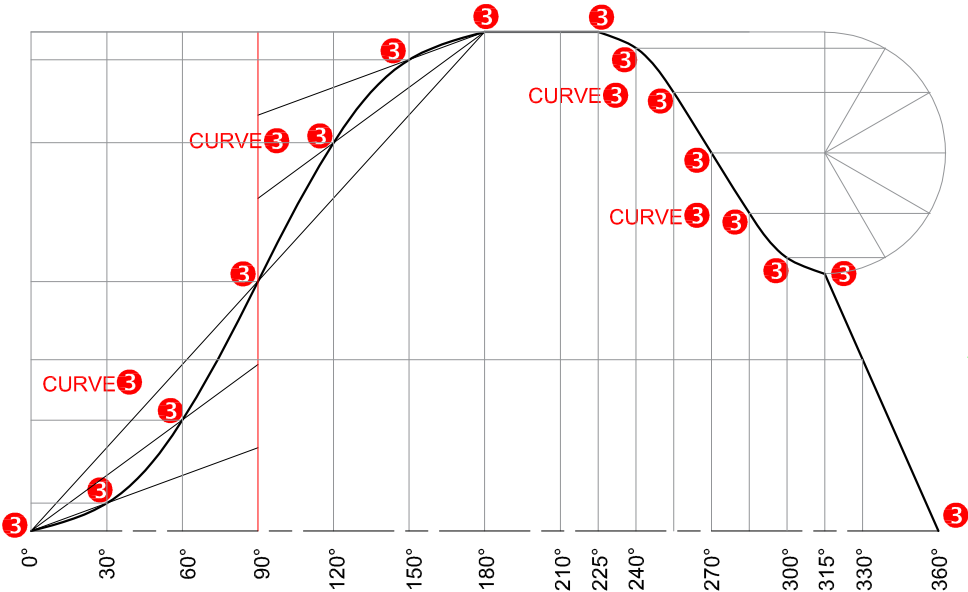
-	14 CENTRE POINTS	7
-	ROLLERS	2
-	POINTS OF TANGENCY	2
-	CURVE TANGENT TO GIVEN FOLLOWER	0,5
-	CURVE QUALITY (4 x $\frac{1}{2}$ )	2
	<u>TOTAL</u>	<u>13 <math>\frac{1}{2}</math></u>



-	PROJECTION / TRANSFERRING FROM GRAPH	1
-	CIRCLE DIVISION	1
-	ARC PROJECTION / TRANSFER	1
-	PLOT DIRECTION (ANTI-CLOCKWISE)	1
-	ARROW (CLOCKWISE)	1
	<b>TOTAL</b>	<b>5</b>

ASSESSMENT CRITERIA		
1	GIVEN + MINIMUM DISTANCE + CL	5
4	CAM CONSTRUCTION + ARROW	5
5	PLOTTING + CAM PROFILE	13 $\frac{1}{2}$
<b>TOTAL</b>		23 $\frac{1}{2}$

*Please turn over*



DISPLACEMENT GRAPH ②

**2. GRAPH CONSTRUCTION**

- LENGTH (120) 1
- 12 EQUAL DIVISION 1
- TOTAL** 2

**2. UNIFORM ACCELERATION + RETARDATION CONSTRUCTION**

- VERTICAL DIVISION 0.5
- 1st HALF 0.5
- 2nd HALF 0.5
- TOTAL** 1½

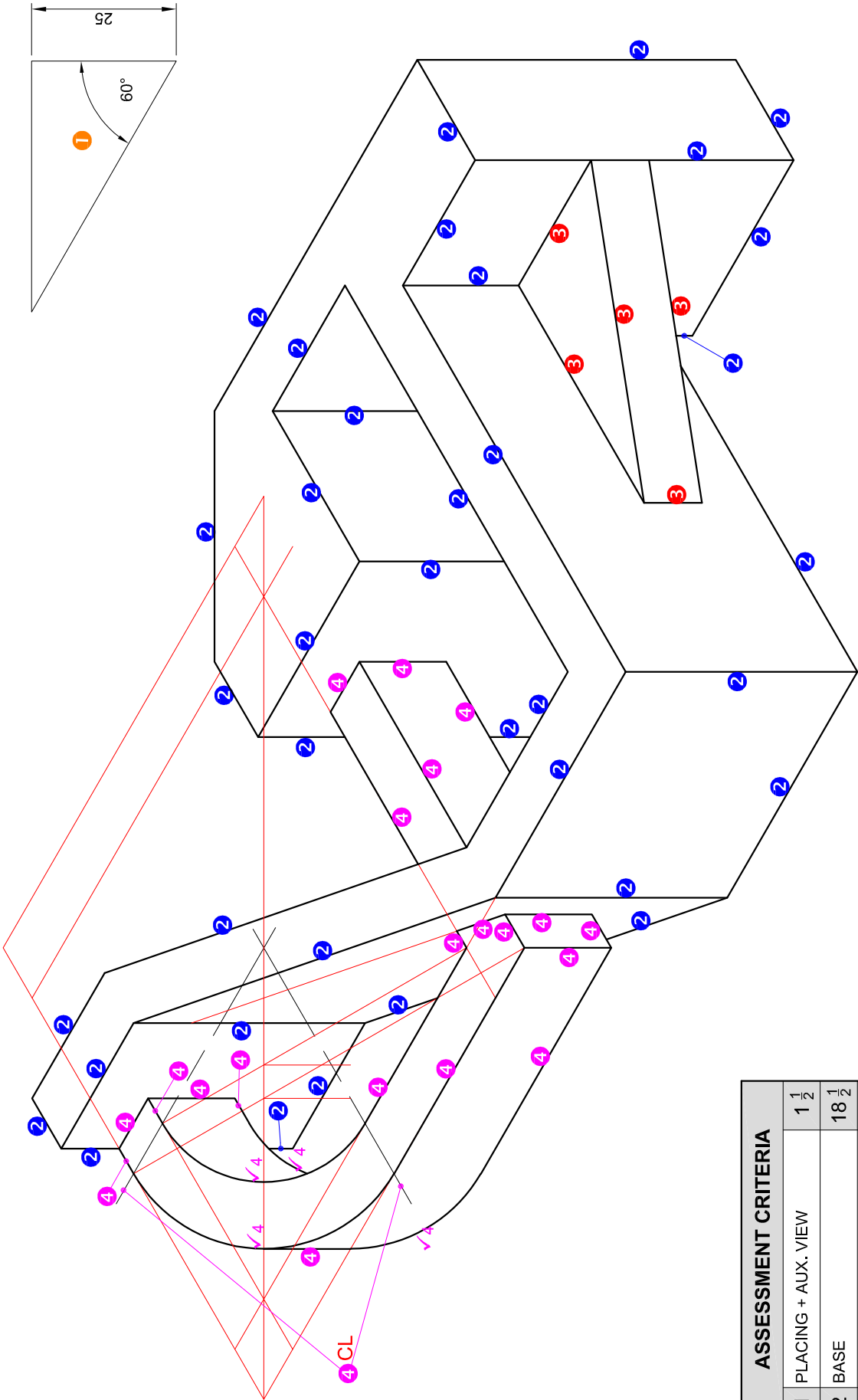
**2. SIMPLE HARMONIC MOTION CONSTRUCTION**

- SEMI CIRCLE 0.5
- CIRCLE DIVISION 0.5
- ADDITIONAL 15° DIVISIONS 0.5
- PROJECTION 0.5
- TOTAL** 2

ASSESSMENT CRITERIA		
2	GRAPH CONSTRUCTION + LABELS	6
3	PLOTTING GRAPH + GRAPH CURVES	9½
TOTAL		15½

PAPER 2 QUESTION 2  
GRADE 12  
JUNE 2023  
MARKING GUIDELINE

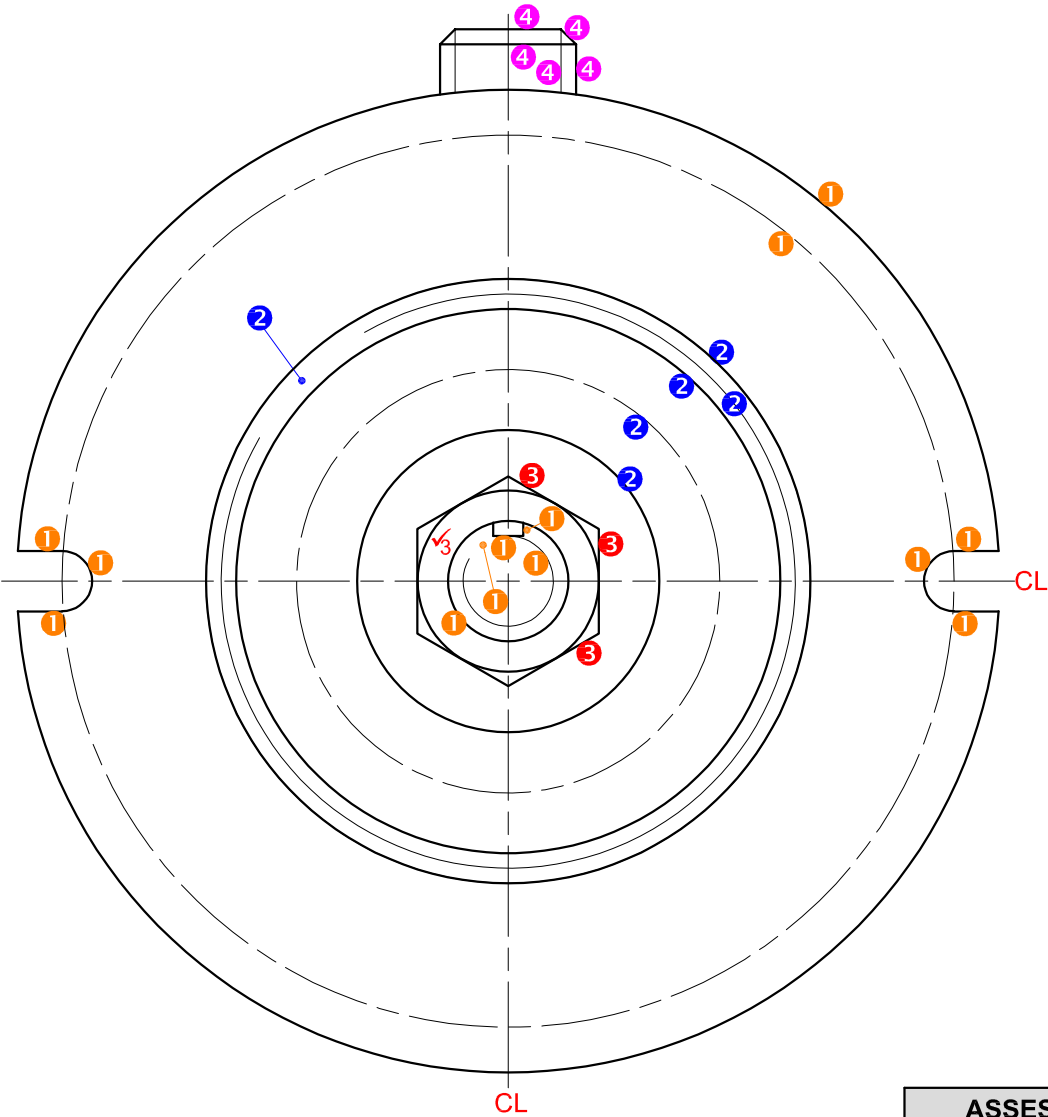
ARC CONSTRUCTION ✓ 4



P ✓ 1 PLACEMENT / ORIENTATION

PAPER 2 QUESTION 3  
GRADE 12  
JUNE 2023  
MARKING GUIDELINE

ASSESSMENT CRITERIA		1 1 2
1	PLACING + AUX. VIEW	18 1 2
2	BASE	2 1 2
3	WEB	15 1 2
4	CIRCLE + CENTRE LINES + BRACE	
TOTAL		38



1. CENTRE LINES  
SANS COMPLIANT  
1 - 3 = 1; 4 - 5 = 2  
NOTE: THE CONVENTION  
AND PCD CLs NOT INCLUDED

1  
2  
3

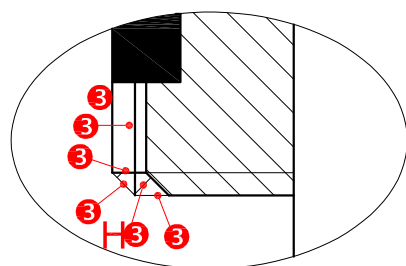
2. ASSEMBLY  
1 MARK FOR EVERY COMPONENT CORRECTLY  
ASSEMBLED (9 PARTS - 1) = 8

ASSESSMENT CRITERIA		
GENERAL		
1	CENTRE LINES	3
2	ASSEMBLY	8
SUBTOTAL		11

ASSESSMENT CRITERIA		
RIGHT VIEW		
1	HOUSING + SHAFT	6 <sup>1</sup> / <sub>2</sub>
2	BACK PLATE + COMPRESSOR WHEEL	3
3	M16 NUT	2 <sup>1</sup> / <sub>2</sub>
4	OIL LINE FITTING	2 <sup>1</sup> / <sub>2</sub>
SUBTOTAL		14 <sup>1</sup> / <sub>2</sub>

PAPER 2 QUESTION 4  
GRADE 12  
2023

MARKING GUIDELINES



ASSESSMENT CRITERIA		
SECTIONAL FRONT VIEW		
1	SHAFT	12 $\frac{1}{2}$
2	KEY	2
3	HOUSING	18
4	BUSH	5 $\frac{1}{2}$
5	RUBBER SEAL	4
6	BACK PLATE	3 $\frac{1}{2}$
7	COMPRESSOR WHEEL	8
8	M16 NUT	4
9	OIL LINE FITTING	10
SUBTOTAL		67 $\frac{1}{2}$

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