



# basic education

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

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

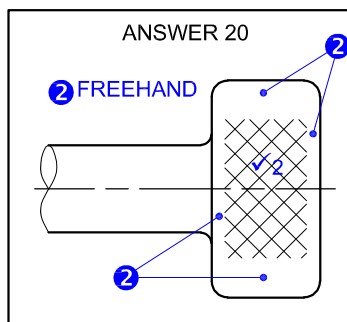
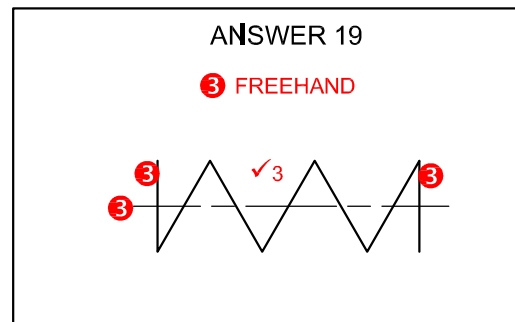
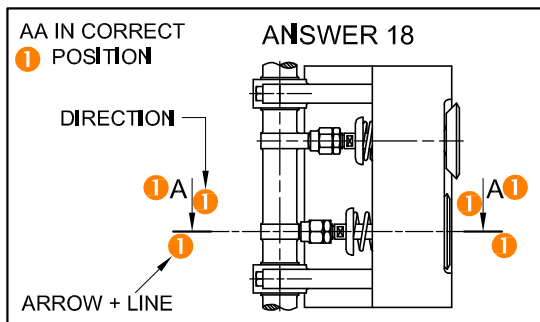
**ENGINEERING GRAPHICS AND DESIGN P2**

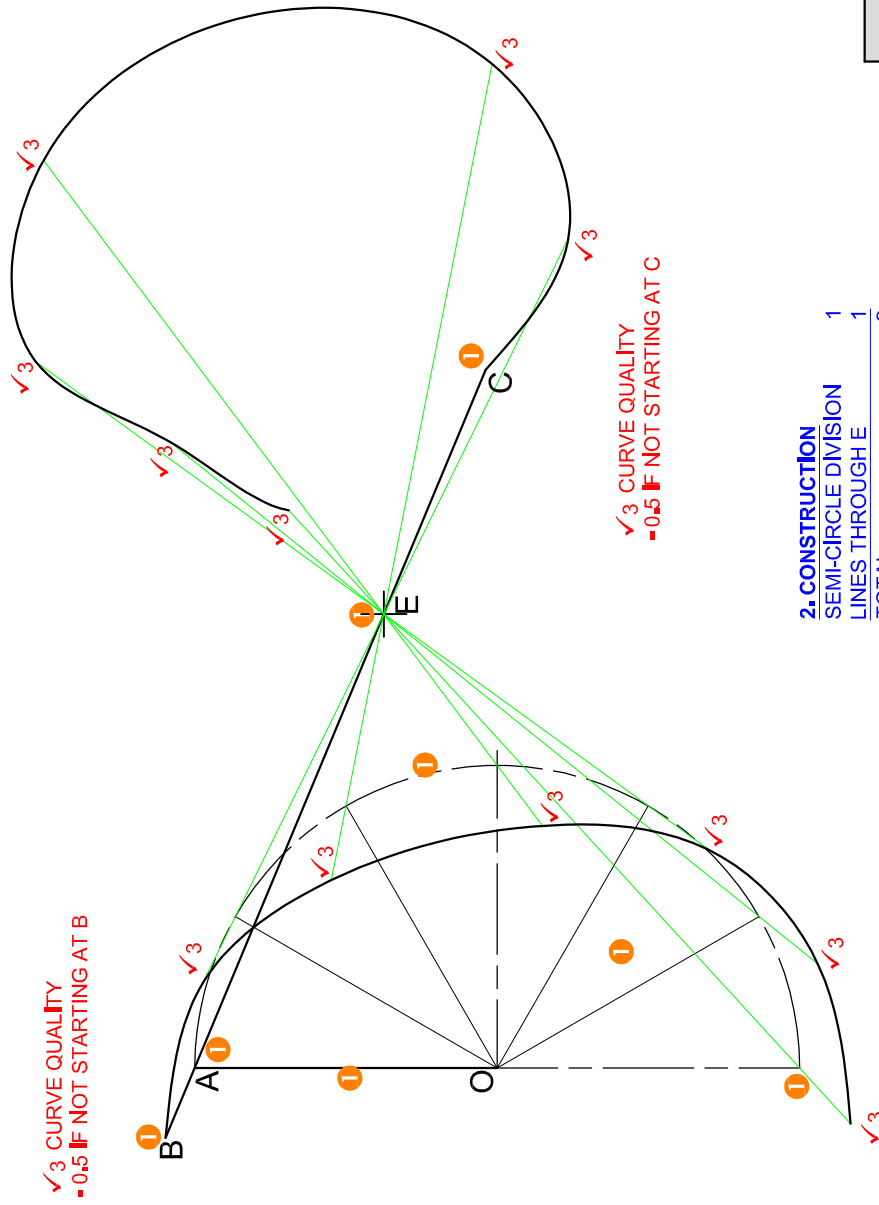
**2022**

**MARKS: 100**

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

<b>ANSWERS</b>		
1	MC ENGINEERING WORKS	1
2	GERALD	1
3	4	1
4	02/04/2021	1
5	THIRD ANGLE	1
6	AUTOCAD 2021	1
7	M5	1
8	2	1
9	A: 7 B: R2 C: 15 D: R3 E: AF12	5
10	R15	1
11	FLAT FACE ON A SHAFT	1
12	INTERRUPTED VIEW/CONTINUES	1
13	GRINDING	1
14	39.81	1
15	5 mm	1
16	BOTTOM VIEW	1
17	11	1
18		3½
19	See below	3
20		2½
<b>TOTAL</b>		<b>30</b>





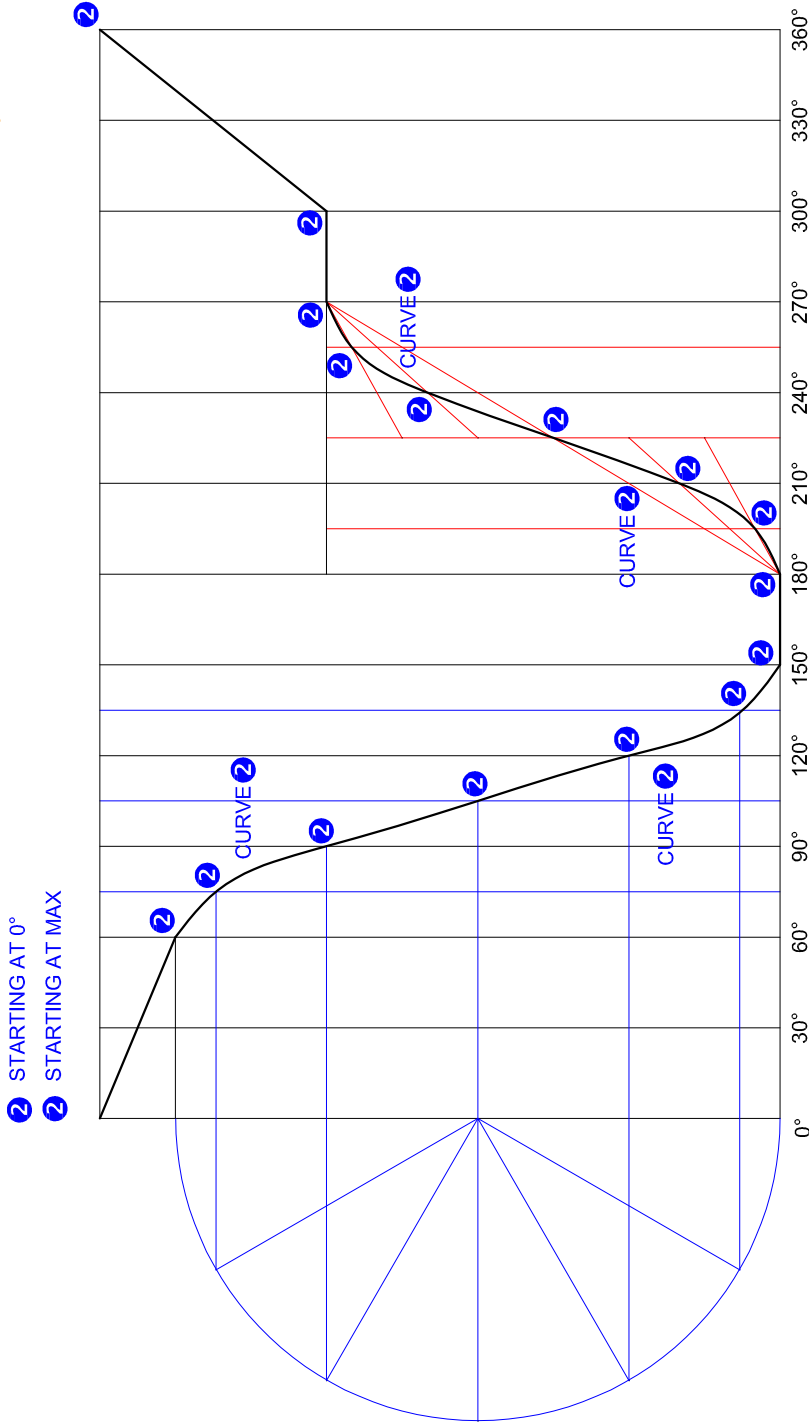
2. CONSTRUCTION  
 SEMI-CIRCLE DIVISION 1  
 LINES THROUGH E 1  
 TOTAL 2

ASSESSMENT CRITERIA 2.1	
1	GIVEN 4
2	CONSTRUCTION 2
3	POINTS + CURVE 14
<b>TOTAL 20</b>	

- 1. CONSTRUCTION OF GRAPH**
- LENGTH (144) 1
  - LINE DIVISION 1
- TOTAL 2

- 1. CONSTRUCTION OF SIMPLE HARMONIC MOTION**
- SEMI CIRCLE 0.5
  - CIRCLE DIVISION 0.5
  - ADDITIONAL 15° DIVISIONS 0.5
  - HORIZONTAL PROJECTION 0.5
- TOTAL 2

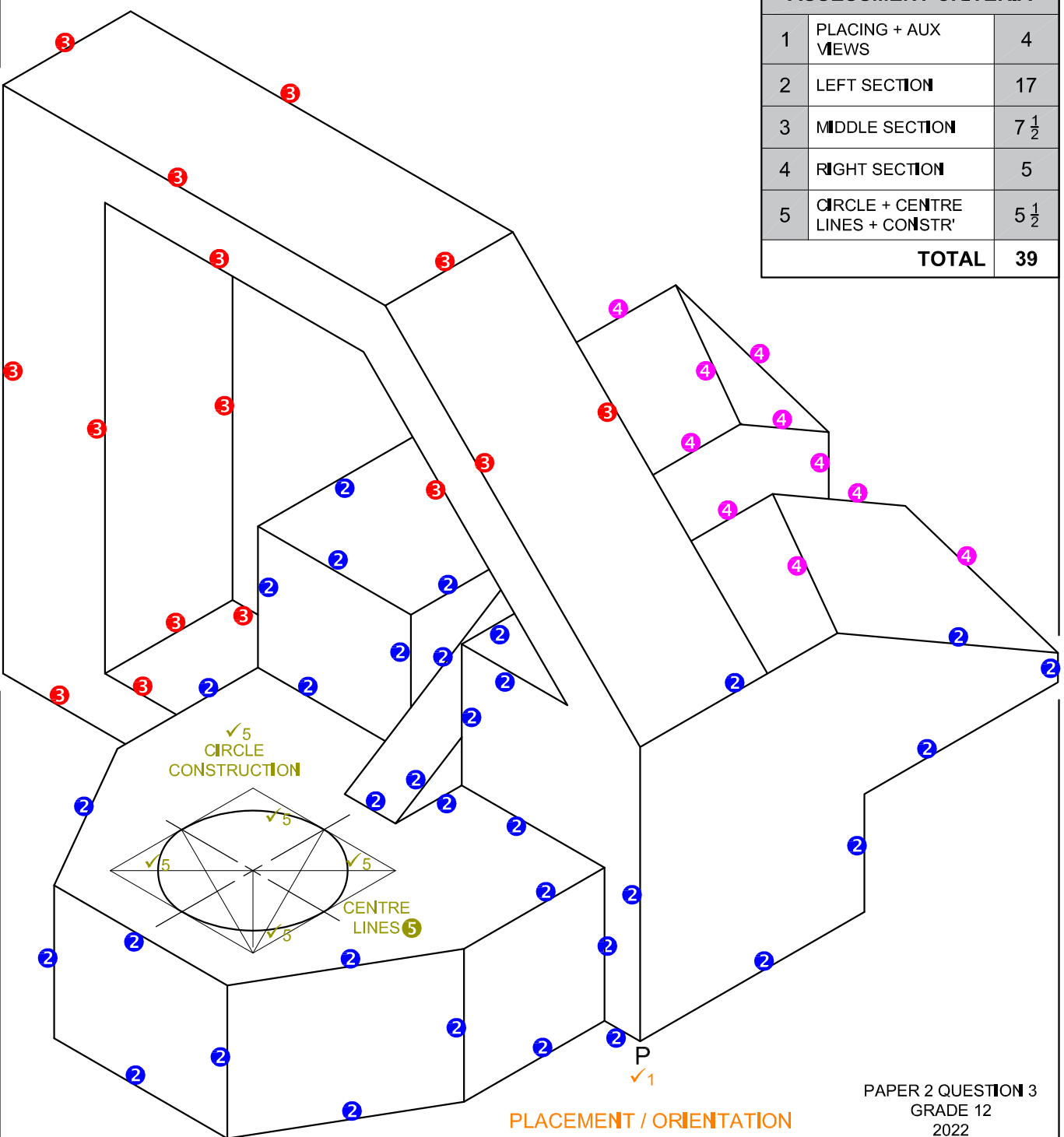
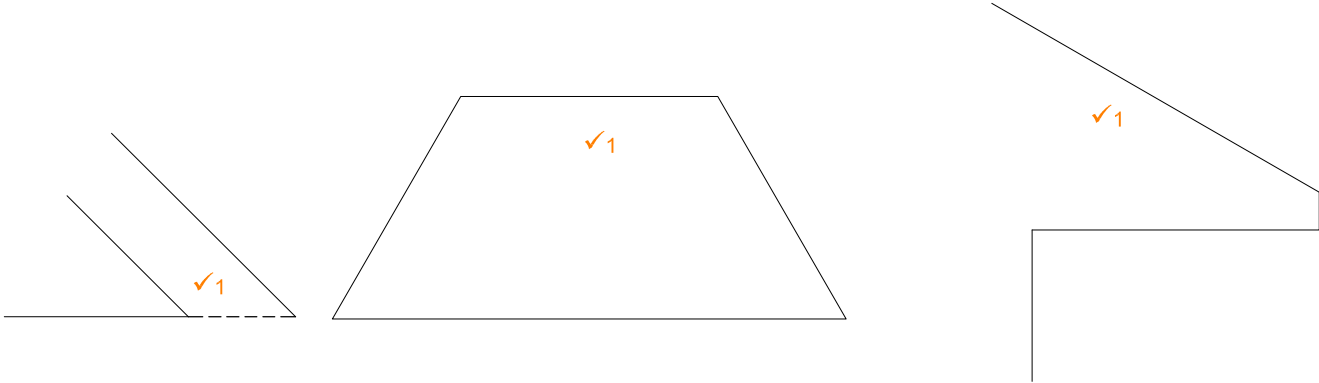
- 1. CONSTRUCTION OF UNIFORM ACCELERATION + RETARDATION**
- ADDITIONAL 15° DIVISIONS 0.5
  - VERTICAL DIVISION 0.5
  - 1st HALF 0.5
  - 2nd HALF 0.5
- TOTAL 2



- ② STARTING AT 0°
- ② STARTING AT MAX

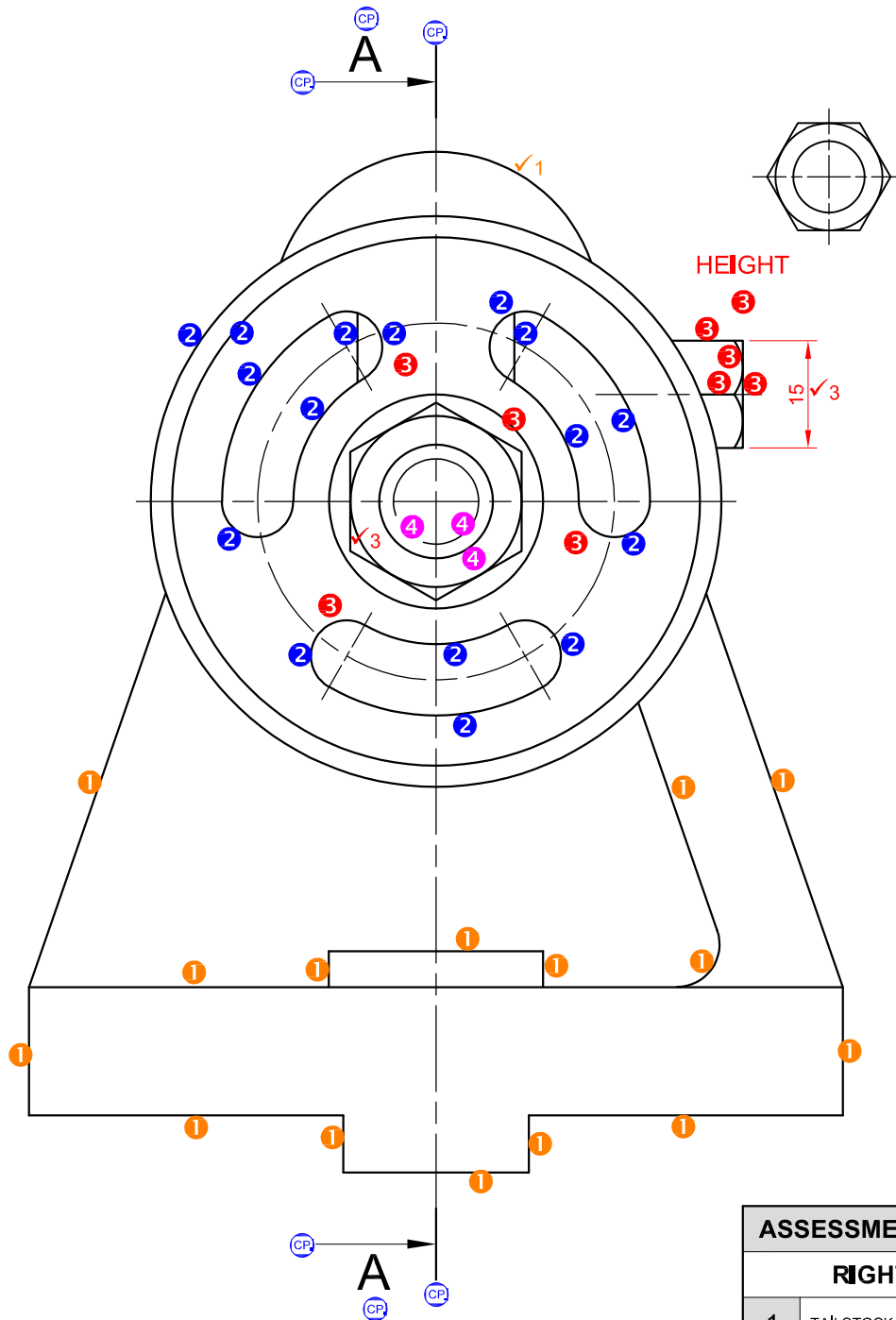
**DISPLACEMENT GRAPH 3**  
**SCALE: 144 mm = 360° ROTATION 3**

ASSESSMENT CRITERIA 2.2	
1	CONSTRUCTION 6
2	POINTS + CURVE 11
3	LABELS 1
<b>TOTAL 18</b>	



ASSESSMENT CRITERIA		
1	PLACING + AUX VIEWS	4
2	LEFT SECTION	17
3	MIDDLE SECTION	7 1/2
4	RIGHT SECTION	5
5	CIRCLE + CENTRE LINES + CONSTR'	5 1/2
<b>TOTAL</b>		<b>39</b>

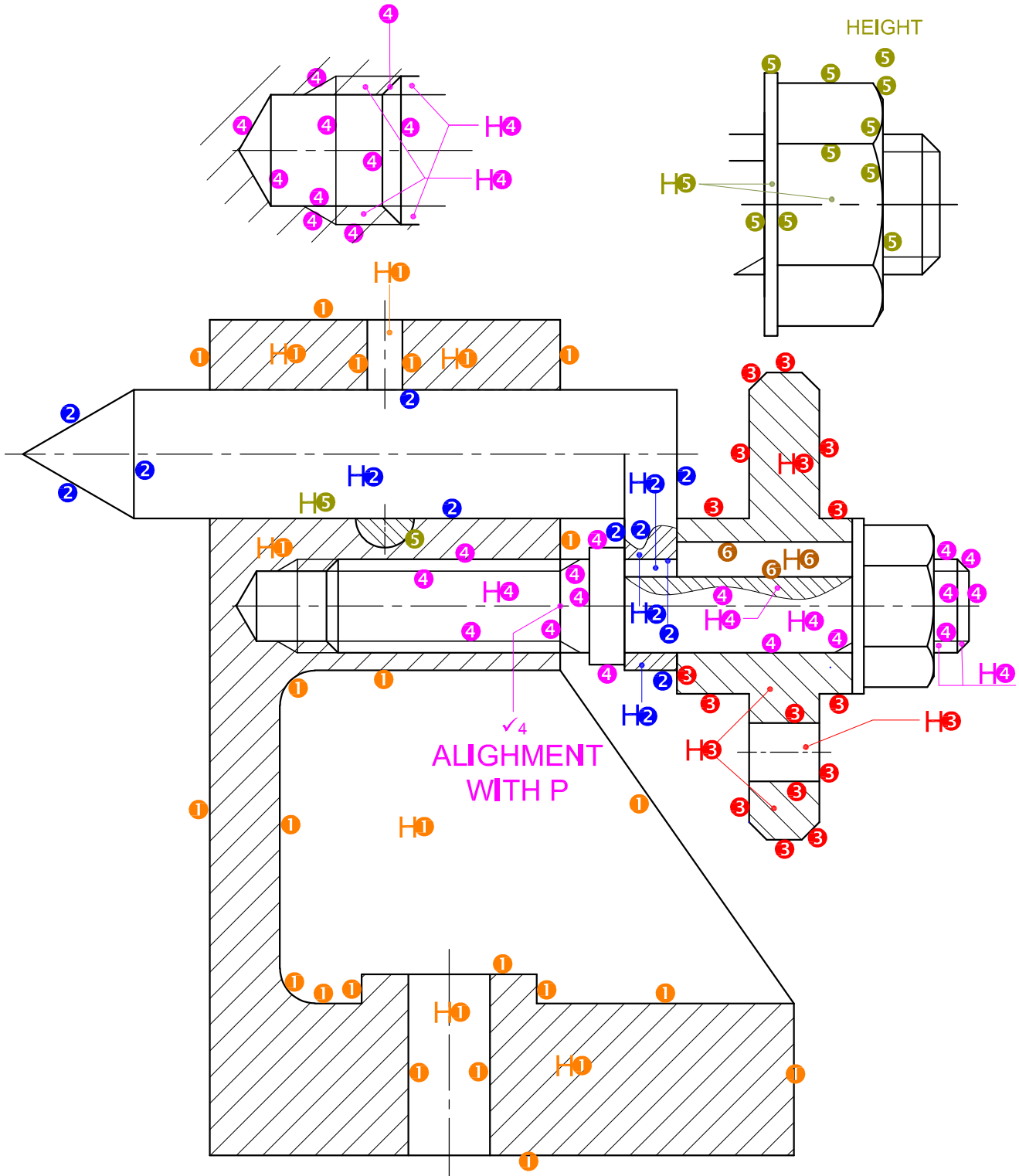
PAPER 2 QUESTION 3  
 GRADE 12  
 2022  
 MARKING GUIDELINES



3. ASSEMBLY (ALTERNATIVE IF ONLY THE RIGHT VIEW WAS DRAWN)  
 1 MARK FOR EVERY COMPONENT CORRECTLY ASSEMBLED (7 PARTS - 1) = 6

ASSESSMENT CRITERIA		
RIGHT VIEW		
1	TAILSTOCK	8 1/2
2	ADJUSTING WHEEL + DEAD CENTRE	8
3	M16 NUT + WASHER + LOCKING NUT	6 1/2
4	ADJUSTING STUD	1 1/2
<b>SUBTOTAL</b>		<b>24 1/2</b>
GENERAL		
2	CUTTING PLANE	3

PAPER 2 QUESTION 4  
 GRADE 12  
 2022  
 MARKING GUIDELINES



**3. ASSEMBLY**  
 1 MARK FOR EVERY COMPONENT CORRECTLY ASSEMBLED (8 PARTS = 1) = 7

**1. CENTRE LINE MARK ALLOCATION**  
 SANS COMPLIANT (LINE TYPE)  
 CENTRE LINES  
 ( 1 to 4 = 1 / 5 to 11 = 2 / 12 to 14 = 3 )  
 TOTAL 4

ASSESSMENT CRITERIA		
GENERAL		
1	CENTRE LINES	4
3	ASSEMBLY	7
<b>SUBTOTAL</b>		<b>14</b>

PAPER 2 QUESTION 4  
 GRADE 12  
 2022  
 MARKING GUIDELINES

ASSESSMENT CRITERIA		
SECTIONAL FRONT VIEW		
1	TAILSTOCK	14
2	DEAD CENTRE	7
3	ADJUSTING WHEEL	9
4	ADJUSTING STUD	16 1/2
5	M16 NUT + WASHER + M10 LOCKING BOLT	6 1/2
6	KEY	1 1/2
<b>SUBTOTAL</b>		<b>54 1/2</b>