



# basic education

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

**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 12**

**ENGINEERING GRAPHICS AND DESIGN P2**

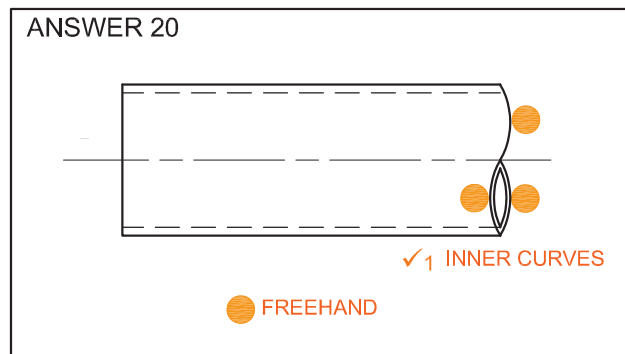
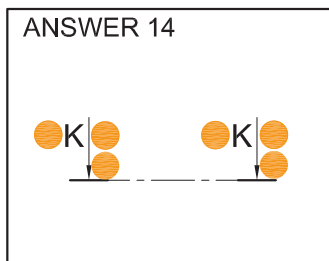
**NOVEMBER 2021**

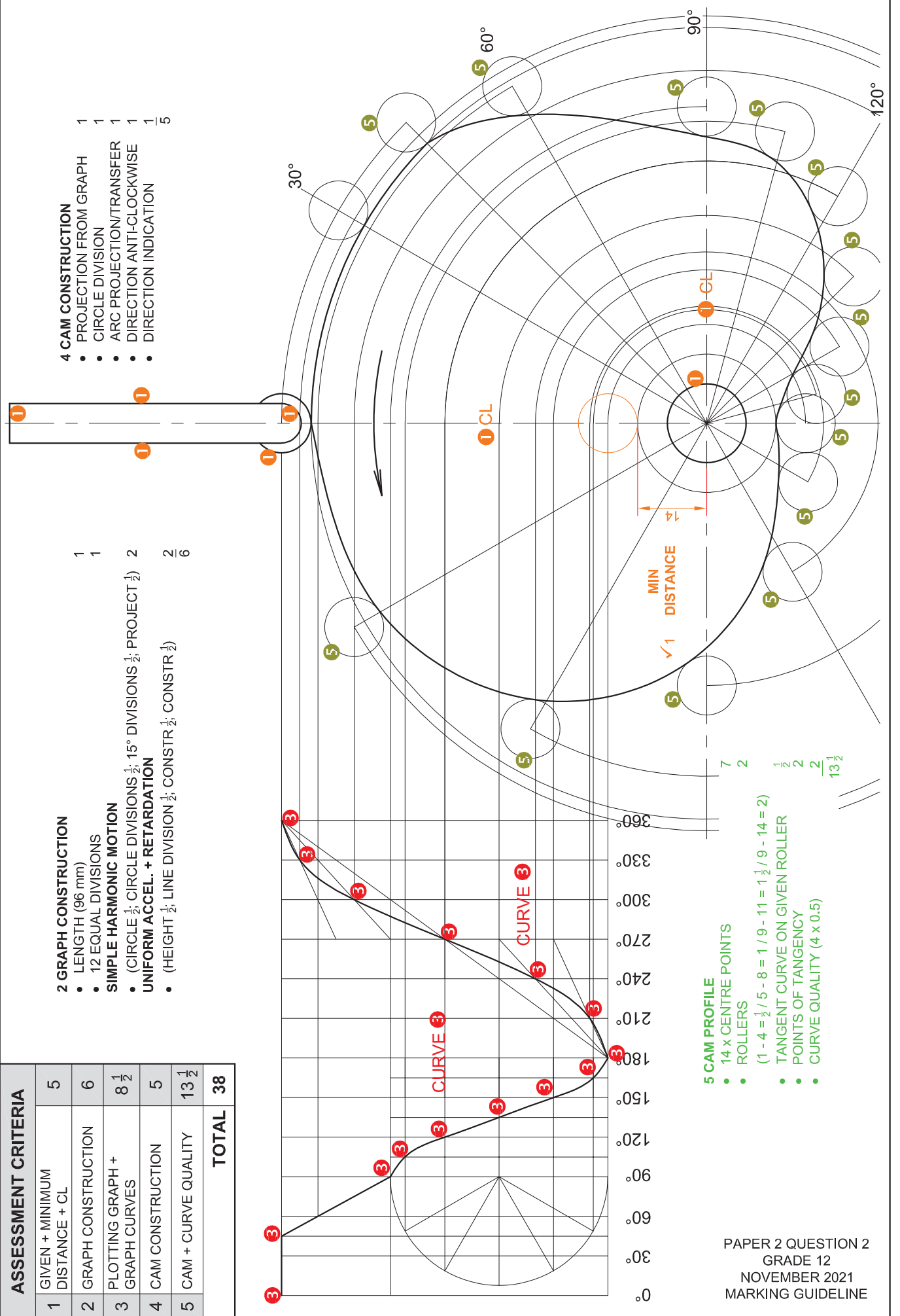
**MARKING GUIDELINES**

**MARKS: 100**

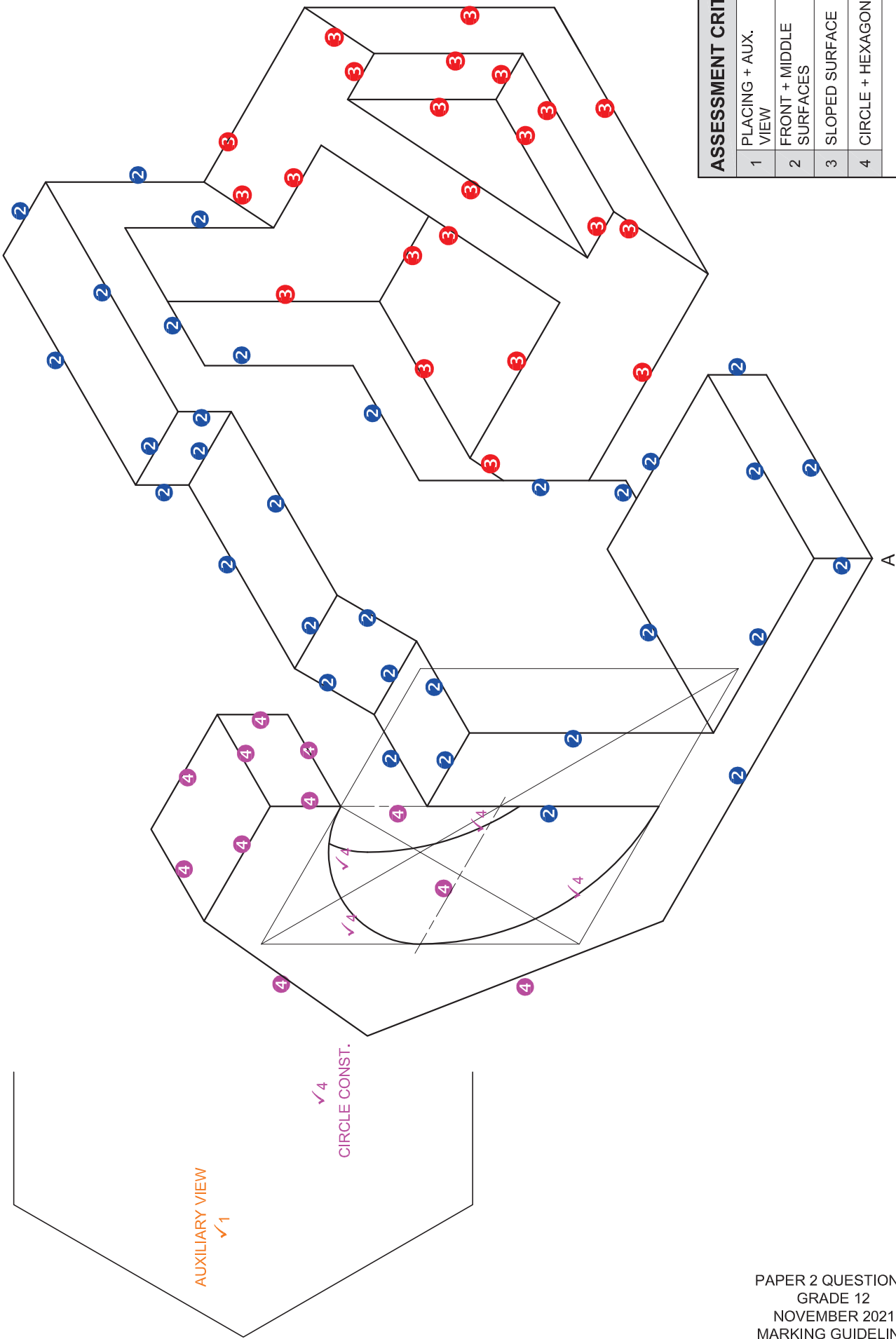
**These marking guidelines consist of 6 pages.**

<b>ANSWERS</b>		
1	CHECKING THE DRAWING	1
2	FILE NAME	1
3	CUT BOLT MANUFACTURERS	1
4	3	1
5	LEFT VIEW	1
6	2000	1
7	6	1
8	FLAT SURFACE / SQUARE ON A SHAFT / NOT ROUND	1
9	REVOLVED SECTION	1
10	A: $20 / \varnothing 20 = \frac{1}{2}$ B: 25 C: AF12 / $\varnothing 12$	3
11	$24^\circ / 25^\circ / 26^\circ$	1
12	135	1
13	1,2	1
14	<i>See below</i>	3
15	4	1
16	LAY/DIRECTION OF MACHINING/ PERPENDICULAR/ $90^\circ$	1
17	CIVIL HATCHING	1
18	7,79	1
19	P	1
	H	1
	G	1
	K	1
	L	1
20	<i>See below</i>	3
<b>TOTAL</b>		<b>30</b>





ASSESSMENT CRITERIA	
1	PLACING + AUX. VIEW
2	FRONT + MIDDLE SURFACES
3	SLOPED SURFACE
4	CIRCLE + HEXAGON
<b>TOTAL 40</b>	



AUXILIARY VIEW  
✓1

✓4  
CIRCLE CONST.

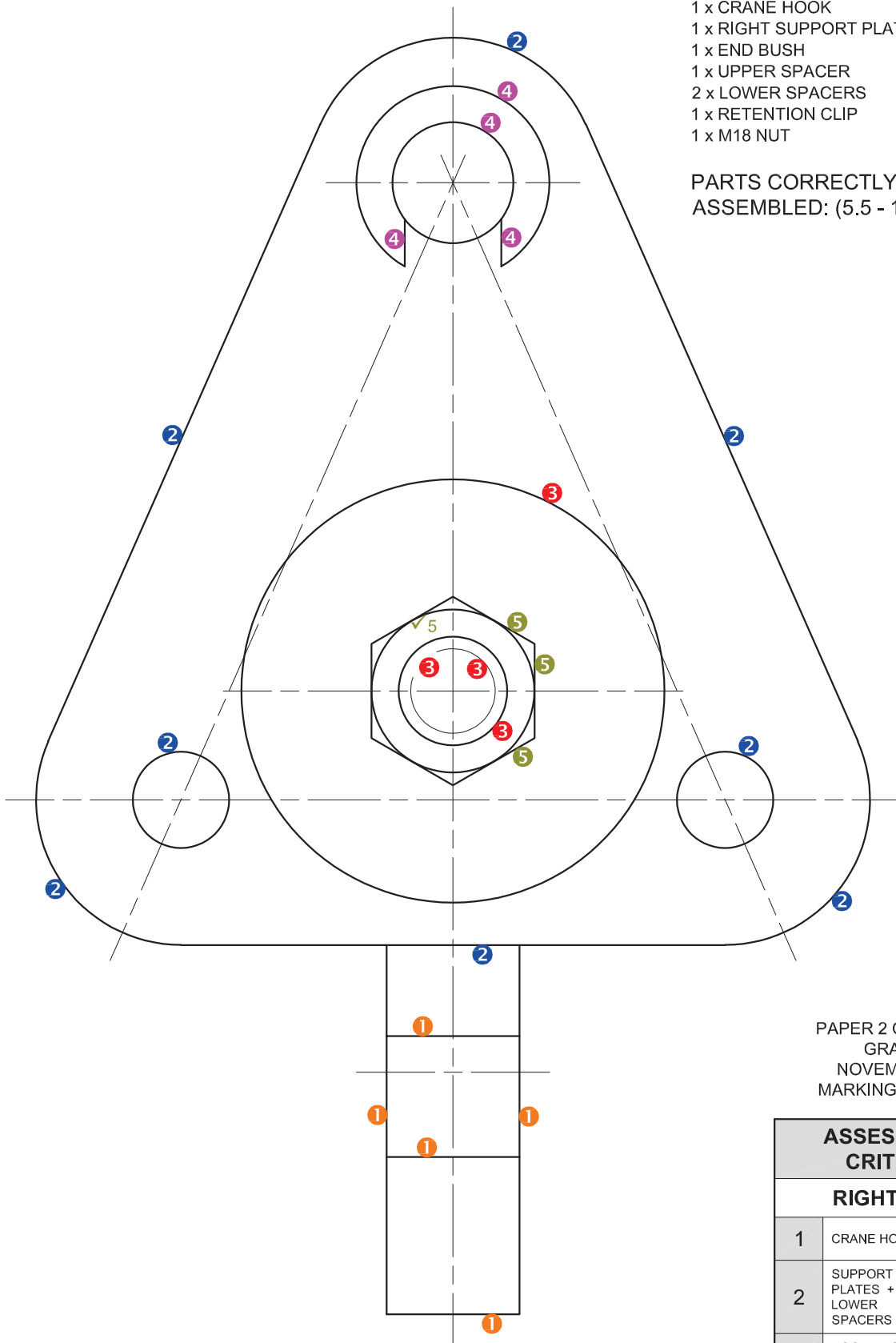
✓1 CORRECT PLACEMENT / ORIENTATION

PAPER 2 QUESTION 3  
GRADE 12  
NOVEMBER 2021  
MARKING GUIDELINE

**2. ASSEMBLY if ONLY RIGHT VIEW DRAWN**

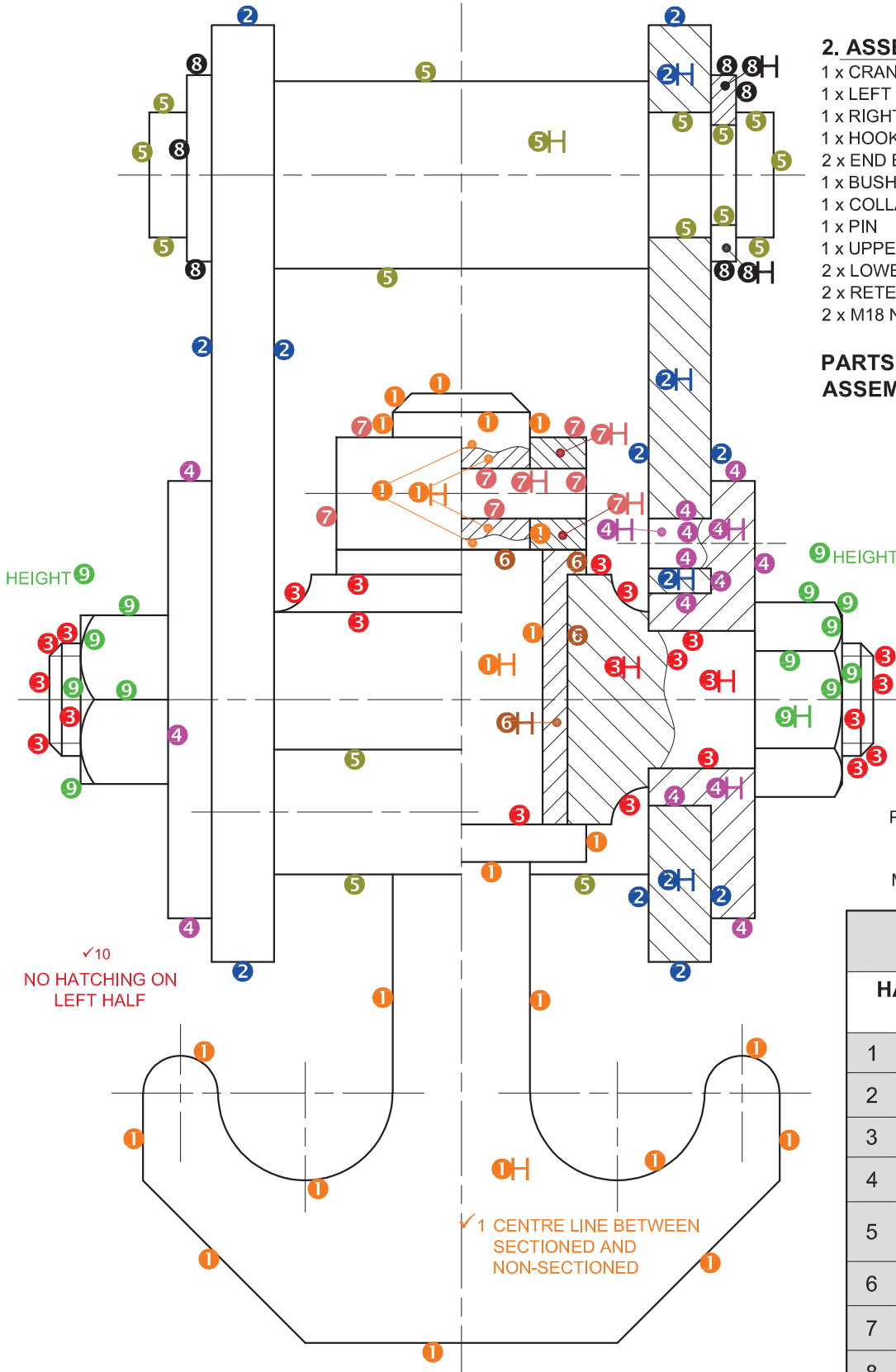
- 1 x CRANE HOOK 1
- 1 x RIGHT SUPPORT PLATE 1
- 1 x END BUSH 0.5
- 1 x UPPER SPACER 1
- 2 x LOWER SPACERS 1
- 1 x RETENTION CLIP 0.5
- 1 x M18 NUT 0.5
- 5.5

**PARTS CORRECTLY ASSEMBLED: (5.5 - 1 = 4.5)**



PAPER 2 QUESTION 4  
 GRADE 12  
 NOVEMBER 2021  
 MARKING GUIDELINE

ASSESSMENT CRITERIA		
RIGHT VIEW		
1	CRANE HOOK	2 ½
2	SUPPORT PLATES + LOWER SPACERS	4
3	HOOK ANCHOR + END BUSH	2
4	RETENTION CLIP + UPPER SPACER	2
5	M18 NUT	2 ½
<b>SUBTOTAL</b>		<b>13</b>



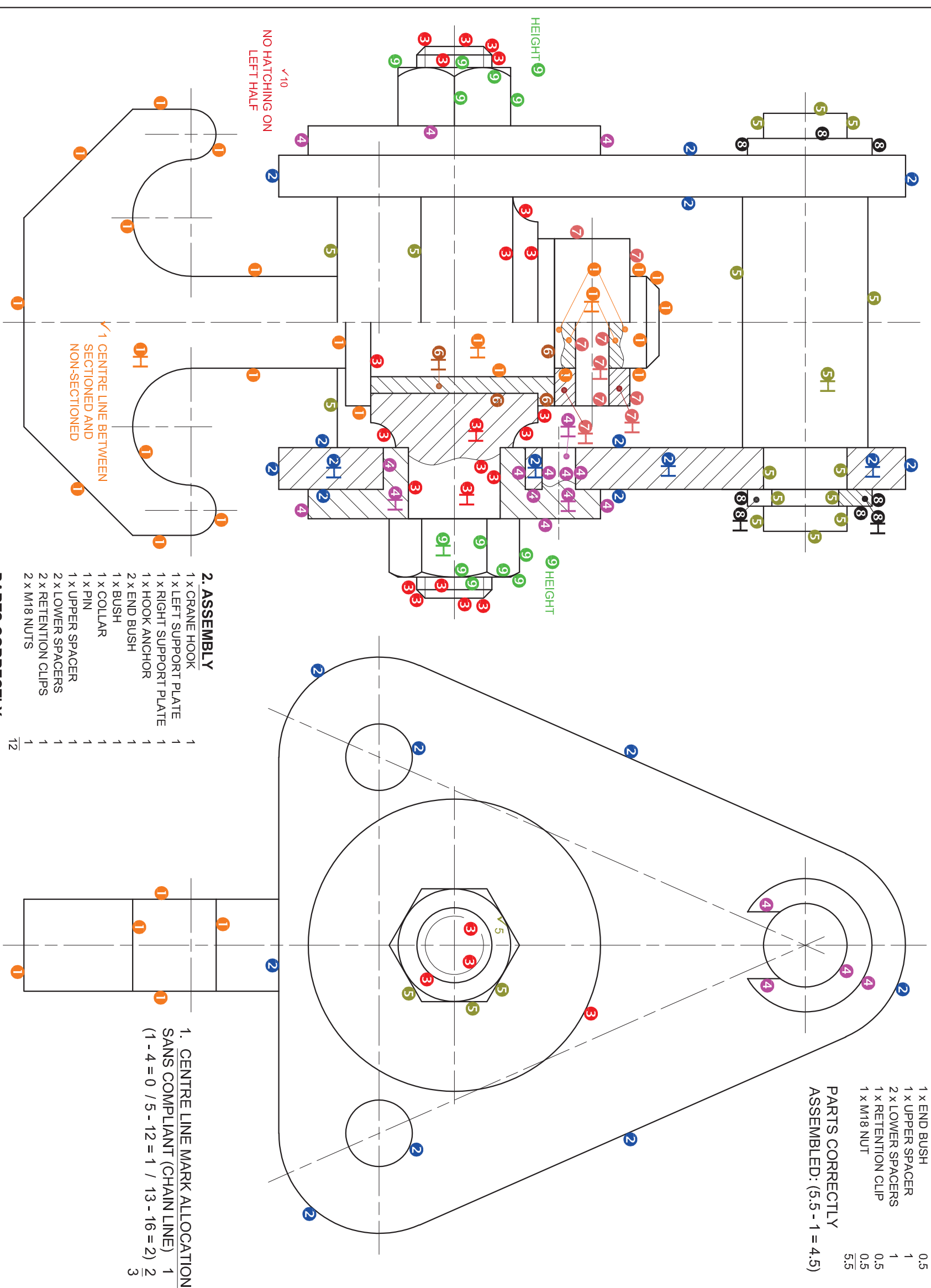
- 2. ASSEMBLY**
- 1 x CRANE HOOK 1
  - 1 x LEFT SUPPORT PLATE 1
  - 1 x RIGHT SUPPORT PLATE 1
  - 1 x HOOK ANCHOR 1
  - 2 x END BUSH 1
  - 1 x BUSH 1
  - 1 x COLLAR 1
  - 1 x PIN 1
  - 1 x UPPER SPACER 1
  - 2 x LOWER SPACERS 1
  - 2 x RETENTION CLIPS 1
  - 2 x M18 NUTS 1
- 12

**PARTS CORRECTLY ASSEMBLED: (12 - 1 = 11)**

PAPER 1 QUESTION 4  
 GRADE 12  
 NOVEMBER 2021  
 MARKING GUIDELINE

ASSESSMENT CRITERIA		
HALF SECTIONAL FRONT VIEW		
1	CRANE HOOK	13
2	SUPPORT PLATES	7
3	HOOK ANCHOR	11
4	END BUSHES	7 1/2
5	UPPER + LOWER SPACERS	8
6	BUSH	2
7	COLLAR + PIN	4 1/2
8	RETENTION CLIPS	4
9	M18 NUTS	7
10	NO HATCHING LEFT HALF	1
<b>SUBTOTAL</b>		<b>65</b>
GENERAL		
1	CENTRE LINES	3
2	ASSEMBLY	11

**1. CENTRE LINE MARK ALLOCATION**  
 SANS COMPLIANT (CHAIN LINE) 1  
 (1 - 4 = 0 / 5 - 12 = 1 / 13 - 16 = 2) 2  
 3



- 2. ASSEMBLY**
- 1 x CRANE HOOK
  - 1 x LEFT SUPPORT PLATE
  - 1 x RIGHT SUPPORT PLATE
  - 1 x HOOK ANCHOR
  - 2 x END BUSH
  - 1 x BUSH
  - 1 x COLLAR
  - 1 x PIN
  - 1 x UPPER SPACER
  - 2 x LOWER SPACERS
  - 2 x RETENTION CLIPS
  - 2 x M18 NUTS
- PARTS CORRECTLY ASSEMBLED: (12 - 1 = 11)**

- 2. ASSEMBLY if ONLY RIGHT VIEW DRAWN**
- 1 x CRANE HOOK
  - 1 x RIGHT SUPPORT PLATE
  - 1 x END BUSH
  - 1 x UPPER SPACER
  - 2 x LOWER SPACERS
  - 1 x RETENTION CLIP
  - 1 x M18 NUT
- PARTS CORRECTLY ASSEMBLED: (5.5 - 1 = 4.5)**

- 1. CENTRE LINE MARK ALLOCATION SANS COMPLIANT (CHAIN LINE)**
- (1 - 4 = 0 / 5 - 12 = 1 / 13 - 16 = 2)

FOR OFFICIAL USE ONLY	
INCORRECT ORTHOGRAPHIC PROJECTION	
INCORRECT OVERALL SCALE	
INCORRECT HATCHING	
PARTS NOT ASSEMBLED	
TOTAL PENALTIES (-)	5.5

ASSESSMENT CRITERIA			
RIGHT VIEW			
	POSSIBLE	OBTAINED	SIGN MODERATED
1	CRANE HOOK	2 ½	
2	SUPPORT PLATES + LOWER SPACERS	4	
3	HOOK ANCHOR + END BUSH	2	
4	RETENTION CLIP + UPPER SPACER	2	
5	M18 NUT	2 ½	
<b>SUBTOTAL</b>		<b>13</b>	

HALF SECTIONAL FRONT VIEW			
1	CRANE HOOK	13	
2	SUPPORT PLATES	7	
3	HOOK ANCHOR	11	
4	END BUSHES	7 ½	
5	UPPER + LOWER SPACERS	8	
6	BUSH	2	
7	COLLAR + PIN	4 ½	
8	RETENTION CLIPS	4	
9	M18 NUTS	7	
10	NO HATCHING LEFT HALF	1	
<b>SUBTOTAL</b>		<b>65</b>	

GENERAL			
1	CENTRE LINES	3	
2	ASSEMBLY	11	
<b>SUBTOTAL</b>		<b>14</b>	
<b>TOTAL</b>		<b>92</b>	
<b>PENALTIES (-)</b>			
<b>GRAND TOTAL</b>			
EXAMINATION NUMBER			
EXAMINATION NUMBER			

EXAMINATION NUMBER	6
--------------------	---