



# basic education

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

## **NATIONAL SENIOR CERTIFICATE**

**GRADE 12**

**ENGINEERING GRAPHICS AND DESIGN P2**

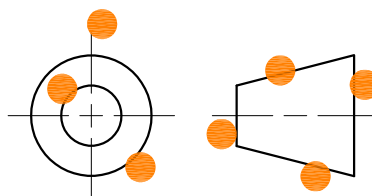
**FEBRUARY/MARCH 2018**

**MARKING GUIDELINES**

**MARKS: 200**

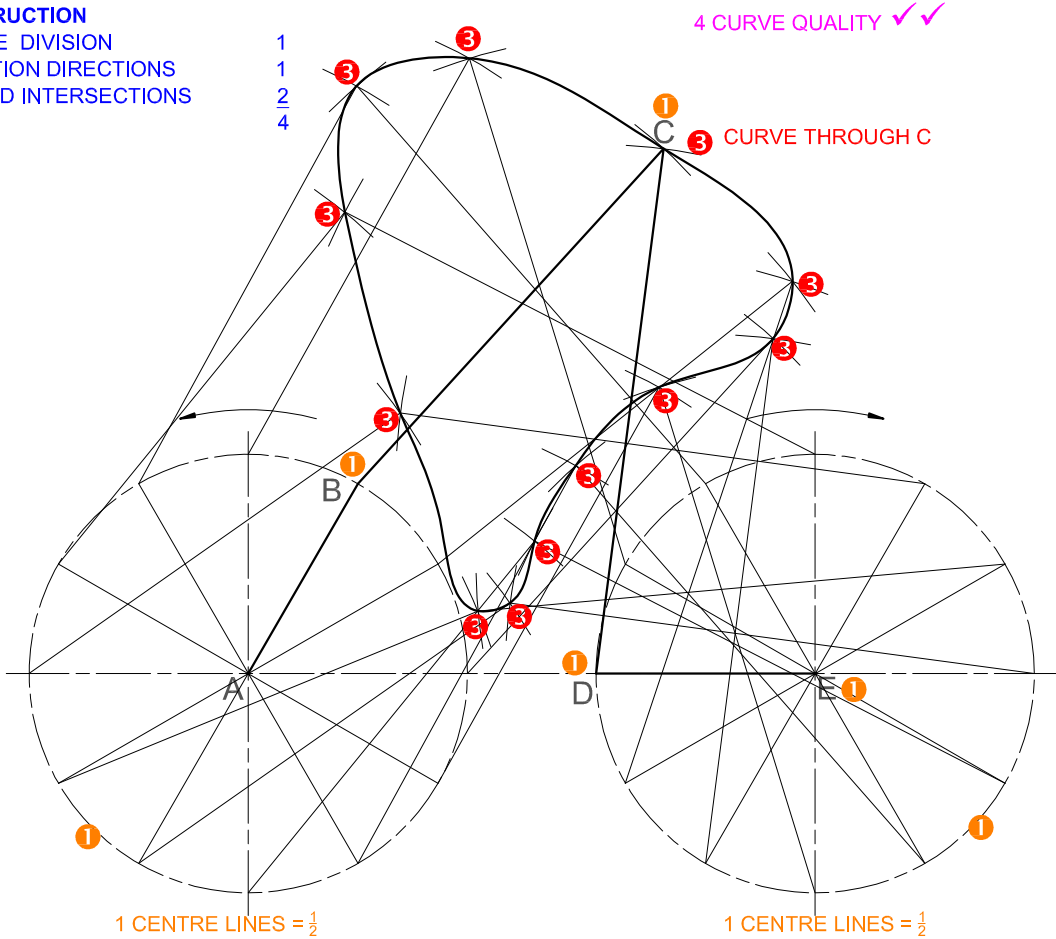
**These marking guidelines consists of 7 pages.**

ANSWERS		
1	15 / 11 / 2016	1
2	NYLON	1
3	www.v4a.co.za	1
4	4	1
5	6	1
6	HALF SECTIONAL FRONT VIEW	1
7	CURVE OF INTERPENETRATION	1
8	B: Ø 8      C: 12      D: Ø18	3
9	NO	1
10	SYMMETRY	1
11	CROSS SECTION OF THE SHAFT	2
12	SQUARE ON A SHAFT OR FLAT FACE ON A CYLINDER	1
13	4 mm	1
14	SPECIFIC MATERIAL	1
15	190	1
16	PITCH CIRCLE DIAMETER	1
17	12	1
18	17.85	1
19	$56 \times 1.5 = 84 \text{ mm}$	2
20	CHROMIUM PLATED	1
21	See below	4
TOTAL		28

**ANSWER 21:** Projection symbol
 FREEHAND


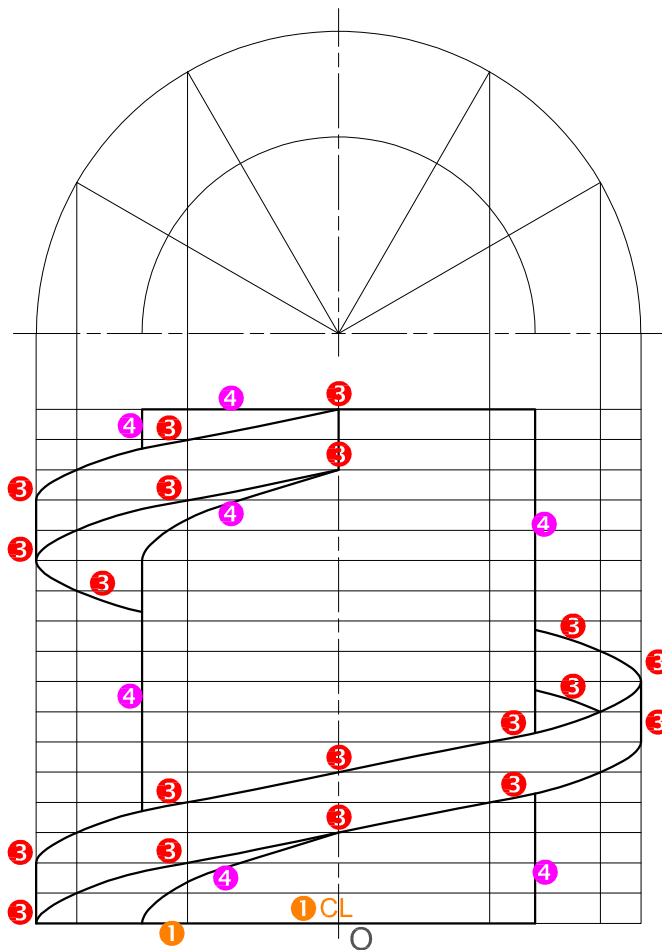
2 CONSTRUCTION

- CIRCLE DIVISION
- ROTATION DIRECTIONS
- BC + CD INTERSECTIONS



ASSESSMENT CRITERIA 2.1		
1	GIVEN	4
2	CONSTRUCTION	4
3	POINTS	6
4	CURVE QUALITY	2
SUBTOTAL		16

PAPER 2 QUESTION 2.1  
GRADE 12  
Feb.-Mar. 2018  
MARKING GUIDELINES



- 2 CONSTRUCTION
- AUX. CIRCLES1
  - CIRCLE DIVISION1
  - PITCH + 12 DIVISIONS2
  - HORIZONTAL PROJECTION1
  - VERTICAL PROJECTION1
  - DIRECTION2
- 8

- 5 CURVE QUALITY
- OUTER CURVE2
  - INNER CURVE1
- 3

ASSESSMENT CRITERIA 2.2		
1	GIVEN + CL	1
2	CONSTRUCTION	8
3	OUTSIDE HELIX	9½
4	INSIDE HELIX + SHAFT	3½
5	CURVE QUALITY	3
SUBTOTAL 2.2		25

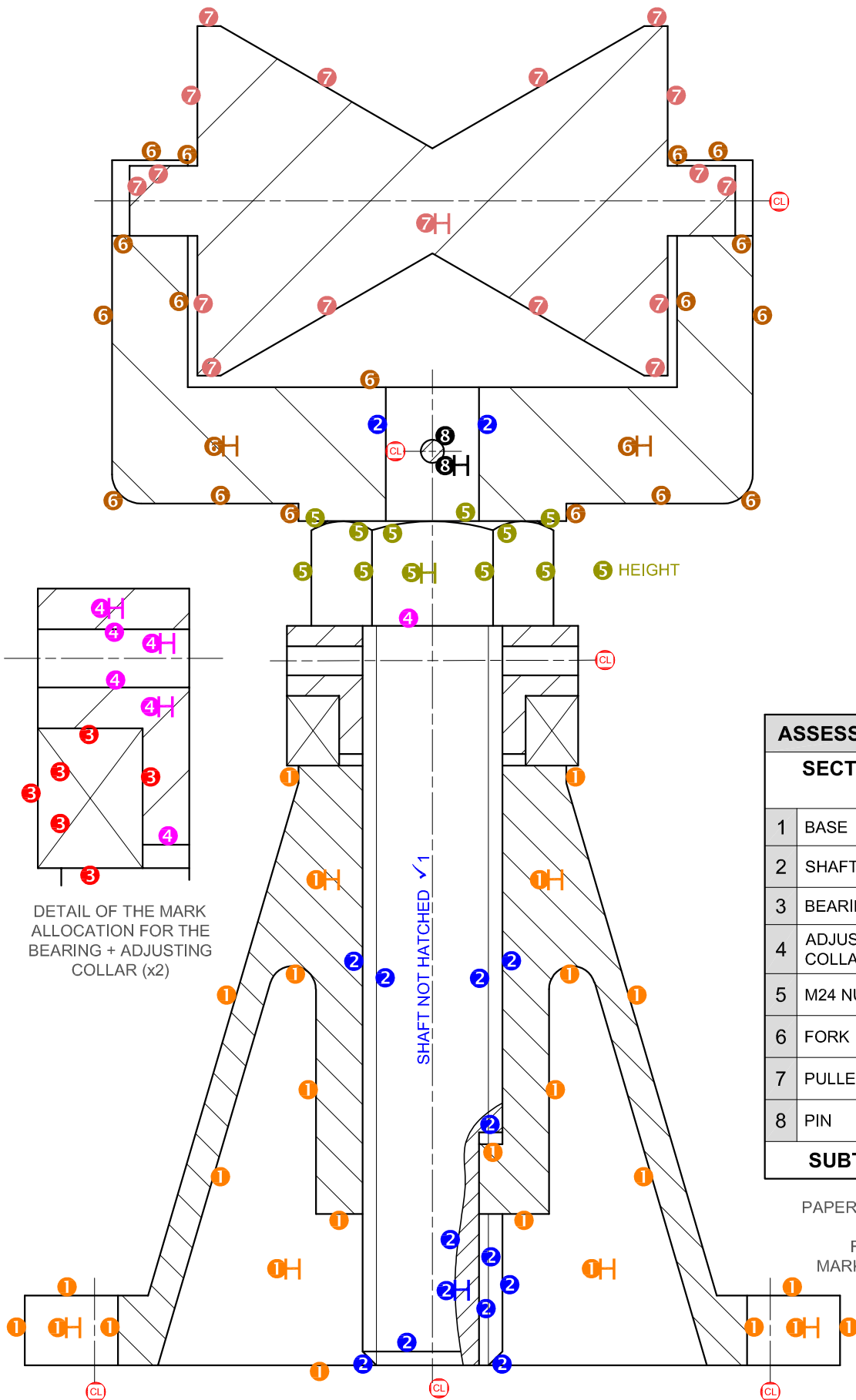
PAPER 2 QUESTION 2.2  
GRADE 12  
Feb.-Mar. 2018  
MARKING GUIDELINES

✓1 CORRECT PLACEMENT B

4 CIRCLE CONSTRUCTION ✓

ASSESSMENT CRITERIA		
1	PLACEMENT + AUX VIEW	2½
2	BASE + FRONT	9½
3	UPRIGHT + MIDDLE	19½
4	CIRCLE + CIRCLE CONSTRUCTION + CL	5½
TOTAL		37

PAPER 2 QUESTION 3  
GRADE 12  
Feb.-Mar. 2018  
MARKING GUIDELINES

**ASSESSMENT CRITERIA****SECTIONAL FRONT VIEW**

1	BASE	13
2	SHAFT	8 $\frac{1}{2}$
3	BEARING	6
4	ADJUSTING COLLAR	6 $\frac{1}{2}$
5	M24 NUT	6
6	FORK	9 $\frac{1}{2}$
7	PULLEY	8 $\frac{1}{2}$
8	PIN	1
<b>SUBTOTAL</b>		<b>59</b>

PAPER 2 QUESTION 4 SFV  
 GRADE 12  
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 MARKING GUIDELINES

SC = SANS CONVENTION FOR SYMMETRY, I.E. NOTHING DRAWN ON THE RIGHT

✓✓ FOR ANY TWO BALLS

PAPER 2 QUESTION 4 RV  
GRADE 12  
Feb.-Mar. 2018  
MARKING GUIDELINES

ASSESSMENT CRITERIA		
RIGHT VIEW		
1	BASE	5
2	BEARING	5
3	ADJUSTING COLLAR	1½
4	M24 NUT	2½
5	FORK	3
6	PULLEY	1
GENERAL		
1	CENTRE LINES	4
2	ASSEMBLY	7
3	CONVENTION	3
4	CUTTING PLANE	3
<b>SUBTOTAL</b>		<b>17</b>
<b>TOTAL</b>		<b>94</b>
PENALTIES(-)		
<b>GRAND TOTAL</b>		