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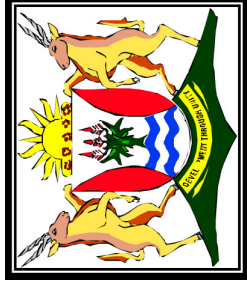
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GRADE 12

ENGINEERING GRAPHICS AND DESIGN P2

SEPTEMBER 2025

PREPARATORY EXAMINATION
MARKING GUIDELINE

MARKS: 200

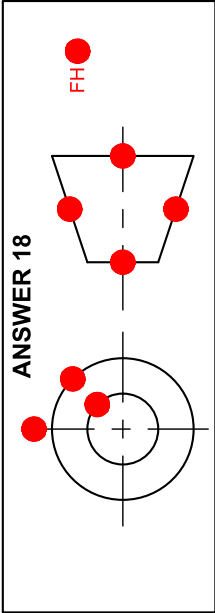
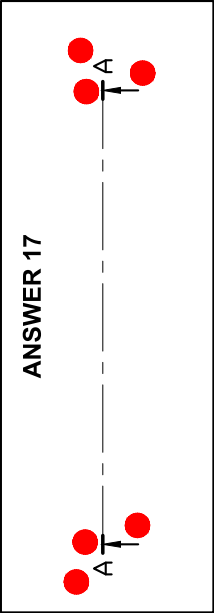
TIME: 3 hours

This marking guideline consists of 7 pages.

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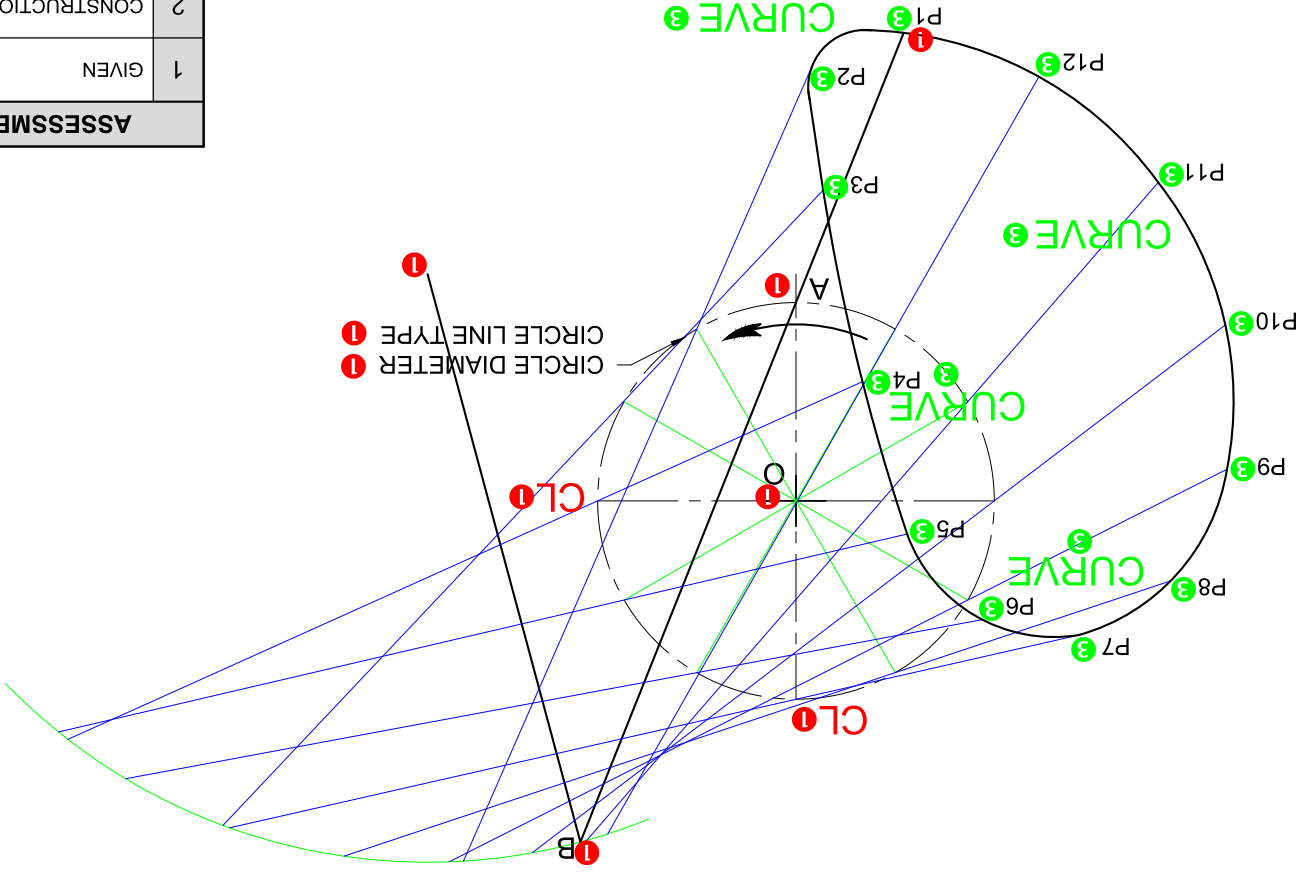
QUESTION 1: ANALYTICAL (MECHANICAL)

ANSWERS		
1	2025/01/06	1
2	BRASS	1
3	NO: 1 OF 3	1
4	M COMBS	1
5	NOT TO SCALE	1
6	151 mm	1
7	FILLET	1
8	SECTIONAL FRONT VIEW	2
9	SECTION OF COMPONENTS TOO THIN OR SMALL FOR HATCHING MAY BE FILLED IN SOLID / THE COMPONENT IS MADE OF RUBBER.	1
10	60°	1
11	TO ALLOW FOR FLOW OF LIQUIDS THROUGH THE PUMP.	2
12	D = 208,5 mm , E = 46 mm , F = 0,7 x 8 = 5,6 mm G = 1,5 x 8 = 12 mm	4
13	HALF SECTION	1
14	INTERRUPTED VIEW / S-BREAK	1
15	7	1
16	155 + 0,27 = 155,27 mm	2
17	SEE BELOW	3
18	SEE BELOW	4
TOTAL		29



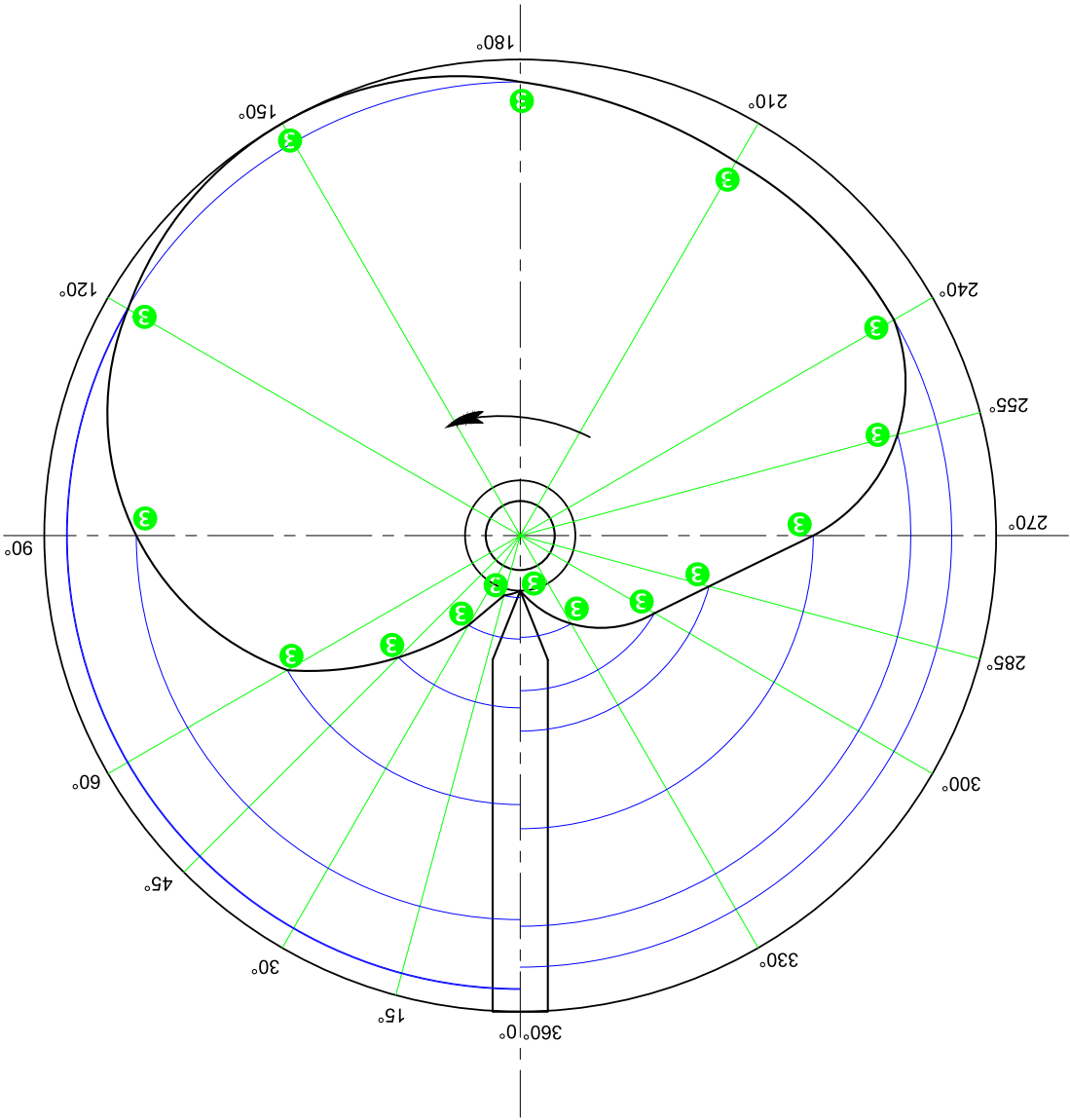
QUESTION 2.1: LOCI (MECHANISM)

- | | | | |
|----------|-------------------------------|---------|-------|
| 1. GIVEN | • POINT A ROTATION AROUND O 1 | • ARROW | TOTAL |
| | | | 2 |



- | | |
|---|----------------------------|
| 5 | TOTAL |
| 1 | • EXTENDED TO P |
| 2 | • CONSTRUCTION OF AB |
| 1 | • CONSTRUCTIONS ARC BC |
| 1 | • CIRCLE DIVISIONS |
| | 2. CONSTRUCTION OF DIAGRAM |

ASSESSMENT CRITERIA		
1	GIVEN	7
2	CONSTRUCTION OF DIAGRAM	5
3	CONSTRUCTION OF LOG	8
TOTAL		20
		3



QUESTION 2.2: LOCI (CAM)

- 1. CAM CONSTRUCTION
- ALIGNMENT WITH MIN. DISTANCE
- PLOT DIRECTION CLOCKWISE
- DIRECTION INDICATED
- PROJECTION FROM GRAPH
- CIRCLE DIVISION
- ARC PROJECTION

TOTAL 6

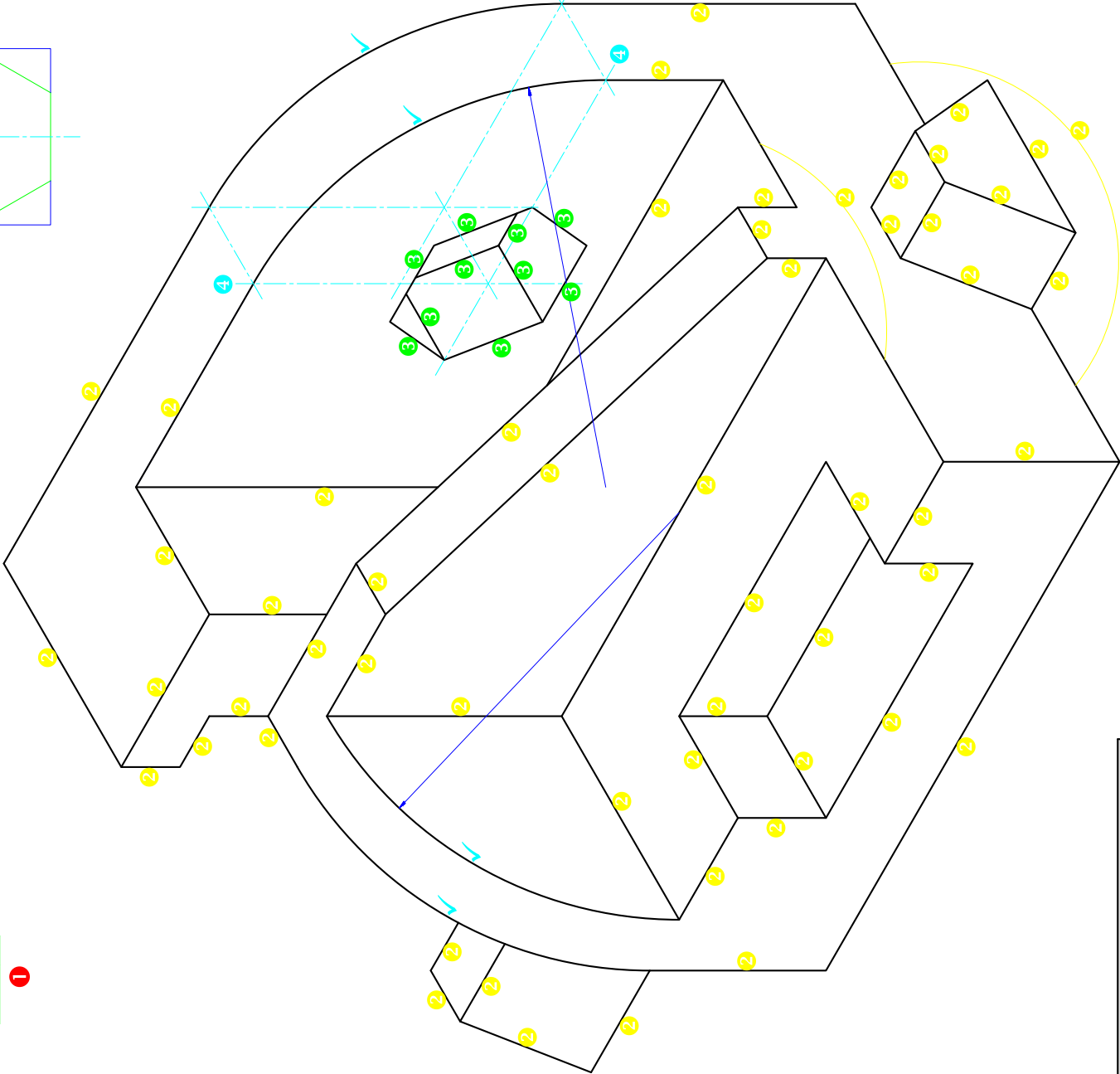
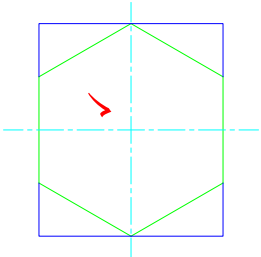
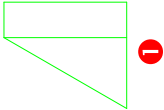
- 2. CURVE QUALITY
- THROUGH WEDGE FOLLOWER POINTS
- CURVE QUALITY

TOTAL 4

ASSESSMENT CRITERIA

1	CAM CONSTRUCTION	6
2	CURVE QUALITY	4
3	CAM PROFILE	8
TOTAL		18

QUESTION 3: ISOMETRIC



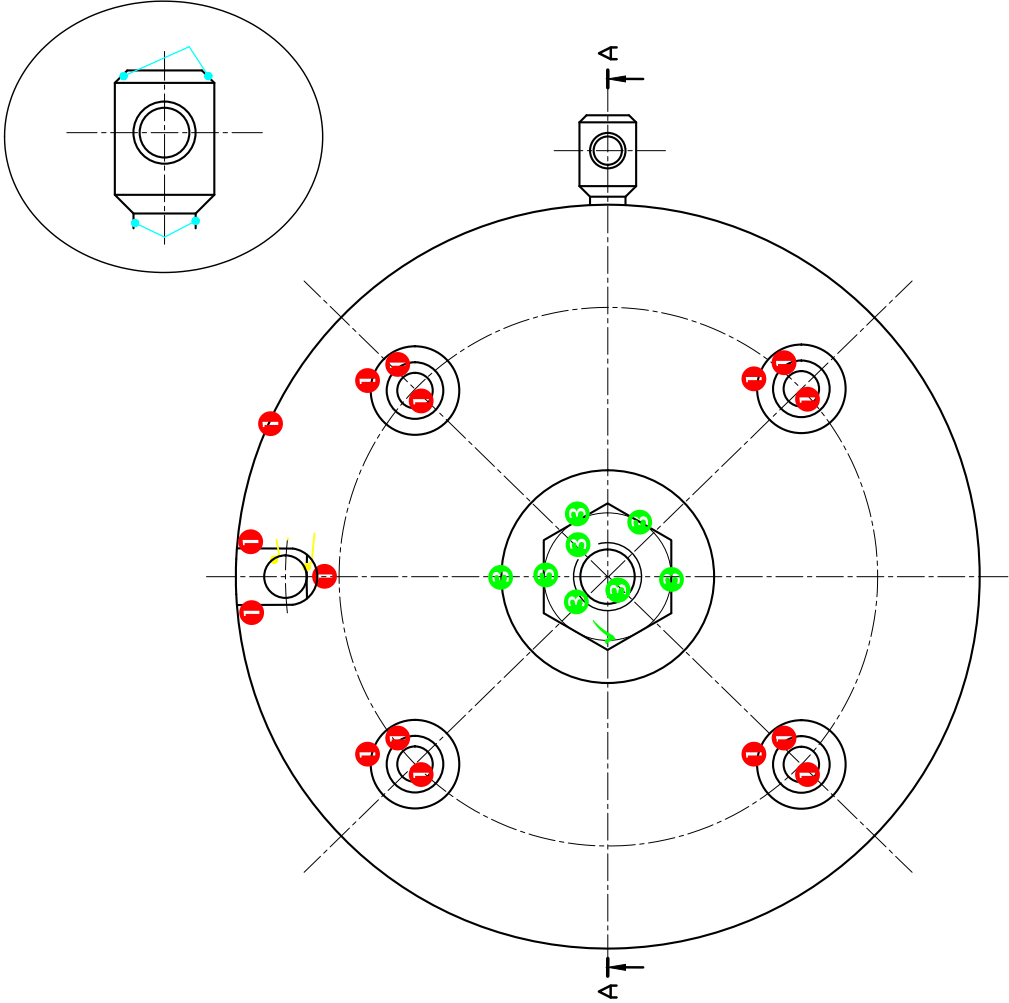
ASSESSMENT CRITERIA	
1	CONSTR' + PLACEMENT 2½
2	ISO' - + NON ISO' LINES 27½
3	HEXAGON 5
4	HALF CIRCLE + CL'S 5
TOTAL 40	

5

QUESTION 4: MECHANICAL ASSEMBLY

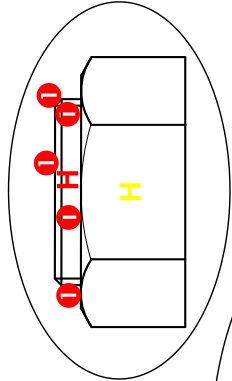
PENALTIES	
1	WRONG SCALE -2
2	PARTS NOT ASSEMBLED (-1 PER PART) -8
3	WRONG HATCHING -2
TOTAL PENALTIES (-)	

ASSESSMENT CRITERIA	
GENERAL	
1	CENTRE LINES: SANS COMPLIANCE = 1 CHAINLINE + (1 - 4 LYNE) = 1 OR CHAINLINE + (5 - 10 LYNE) = 2 3
2	ASSEMBLY 9
SUB-TOTAL 12	



TOP VIEW	
1	DRILL PLATE + BUSH 8
2	BASE + FLANGED COUPLING PLATE 1
3	WASHER + NUT 5
4	CLAMPING SCREW 5
5	SECTION A-A 3
SUB-TOTAL 22	
6	

QUESTION 4: MECHANICAL ASSEMBLY



SECTIONAL FRONT VIEW		
1	EXPANDER BOLT	10 $\frac{1}{2}$
2	NUT+ WASHER	6 $\frac{1}{2}$
3	DRILL PLATE	4 $\frac{1}{2}$
4	FLANGED COUPLING PLATE	5 $\frac{1}{2}$
5	COLLET	6
6	HARDENED SLEEVE	5 $\frac{1}{2}$
7	BASE	7 $\frac{1}{2}$
8	CLAMPING SCREW	11 $\frac{1}{2}$
SUB-TOTAL		57 $\frac{1}{2}$

