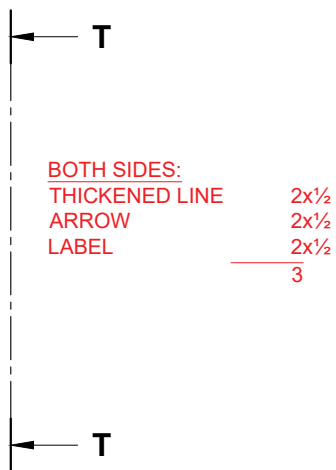


NATIONAL SENIOR CERTIFICATE**GRADE 12****DATE:** NOVEMBER 2024**SUBJECT:** ENGINEERING GRAPHICS AND DESIGN**PAPER:** 2**MARKS:** 100**TIME:** 3 Hours**NUMBER OF
PAGES:** 6**MEMORANDUM**

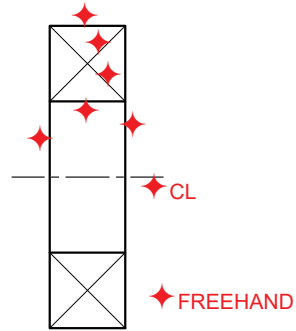
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ANSWERS		
1	www.gtxdraft.co.za✓	1
2	RAMI✓	1
3	07/08/2024 ✓	1
4	NO✓	1
5	1500✓	1
6	SECTIONAL RIGHT VIEW✓✓	2
7	120°✓	1
8	54✓	1
	48✓	1
	220✓	1
9	CONTINUOUS LINE/ A-TYPE✓	1
10	THREAD SIZE/ DEPTH OF THREAD✓	1
11	PART SECTION✓	1
12	PITCH CIRCLE DIAMETER✓	1
13	NOT IN SECTION/ NOT CUT BY CUTTING PLANE✓	1
14	TO TURN THE WHEEL AND SHAFT SIMULTANEOUSLY/ TOGETHER✓✓	2
15	4 x 1,5 = Ø6✓✓	2
16	SEE ANSWER 16, 17 AND 18 BELOW.	3
17		4
18		3
TOTAL:		30

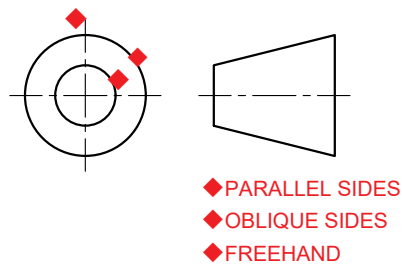
ANSWER 16
SHOULD BE DRAWN ON VIEW 2



ANSWER 17: BEARING



ANSWER 18: PROJECTION SYMBOL



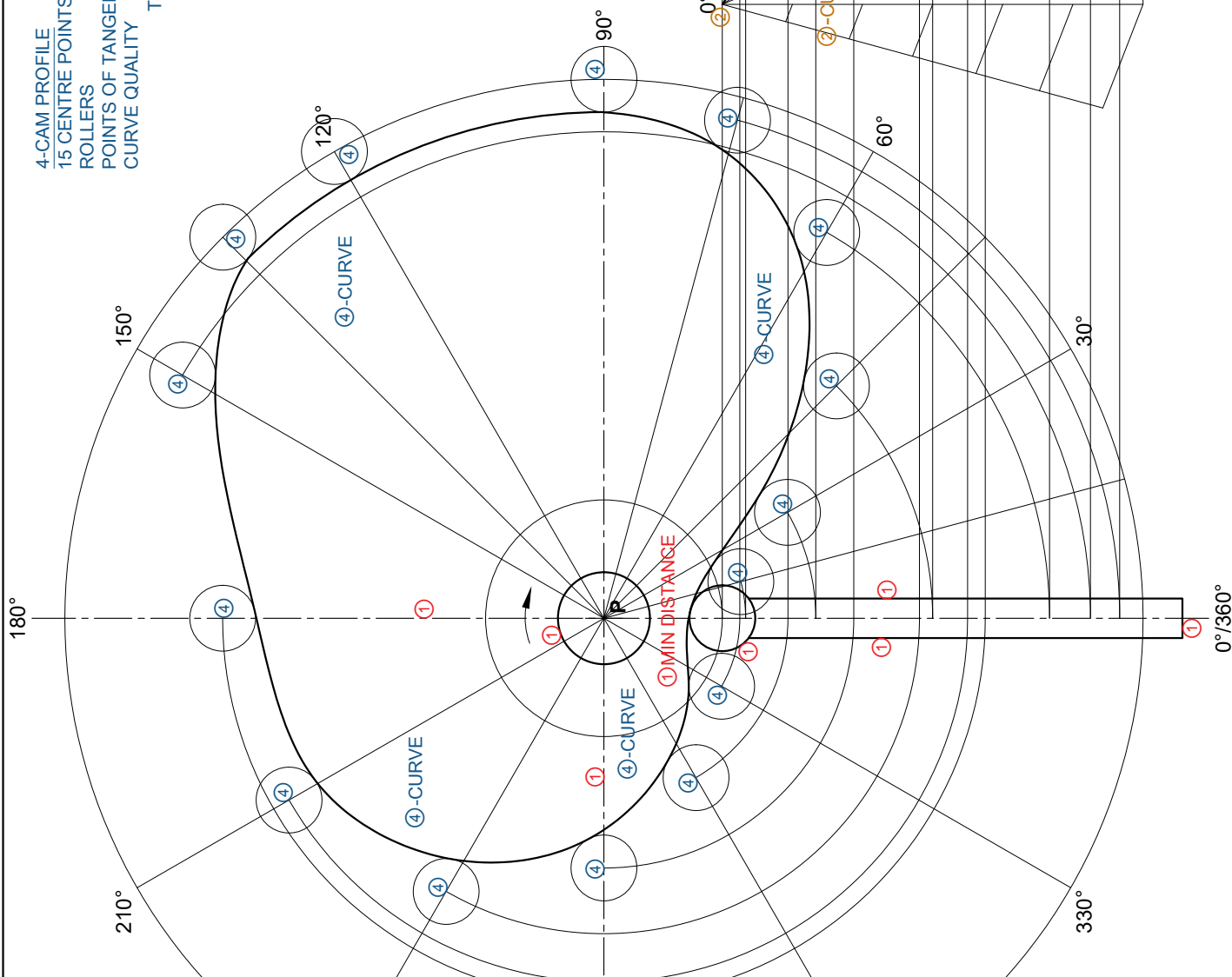
PAPER 2 QUESTION 2
SACAI NSC EXAM
MEMO

3-PROFILE CONSTRUCTION
PROJECTION/ TRANSFER FROM GRAPH 1 1
CIRCLE DIVISION 1
CIRCLE PROJECTION/ TRANSFER 1
DIRECTION - CLOCKWISE 1
ARROW SHOWN 1
TOTAL 5

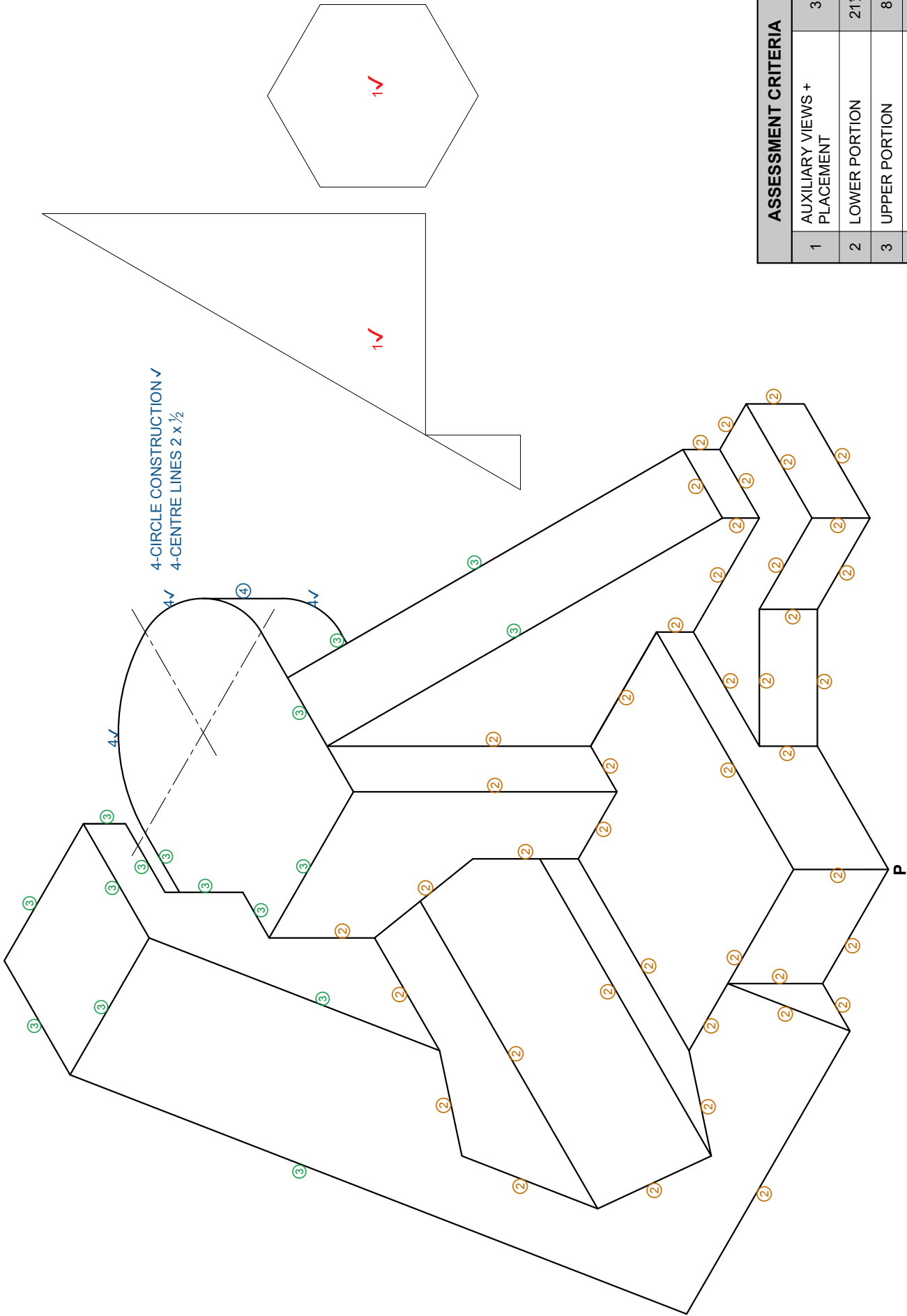
4-CAM PROFILE
15 CENTRE POINTS 7½
ROLLERS 2
POINTS OF TANGENCY 1
CURVE QUALITY 2
TOTAL 12½

2-GRAPH CONSTRUCTION
LENGTH(1) & 12 EQUAL DIVISIONS(1) 2
UNIFORM ACCELERATION & RETARDATION 2
(Height ½, Vertical divisions ½, First half constr ½, second half constr ½)
SIMPLE HARMONIC CONSTRUCTION 2
(Height ½, Semi circle ½, Circle division ½, Horiz. proj. ½)
15 PLOT POINTS 7½
CURVE QUALITY 2
LABEL & SCALE 1
TOTAL: 16½

DISPLACEMENT GRAPH
SCALE 108 mm = 360°



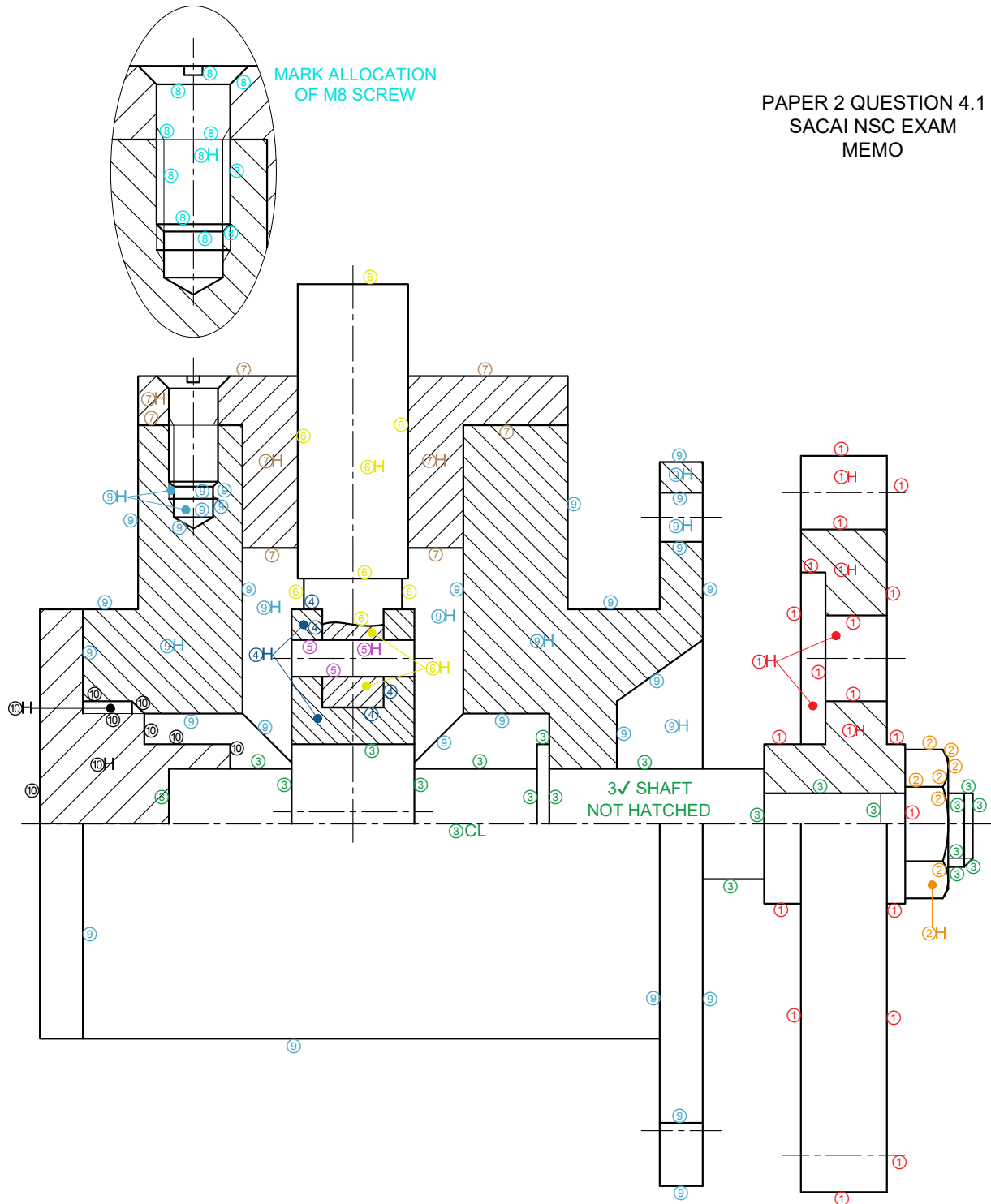
ASSESSMENT CRITERIA	
1	FOLLOWER + MIN. DIST. + CAMSHAFT + CENT. LINE 4
2	DISPLACEMENT GRAPH + CONSTRUCTION 16 ½
3	CONSTR + DIRECTION 5
4	PLOTTING + CURVES 12 ½
TOTAL: 38	



ASSESSMENT CRITERIA					
1	AUXILIARY VIEWS + PLACEMENT	3			
2	LOWER PORTION	21½			
3	UPPER PORTION	8			
4	CIRCLE+ CENTRE LINES + CONSTRUCTION	5½			
TOTAL:		38			

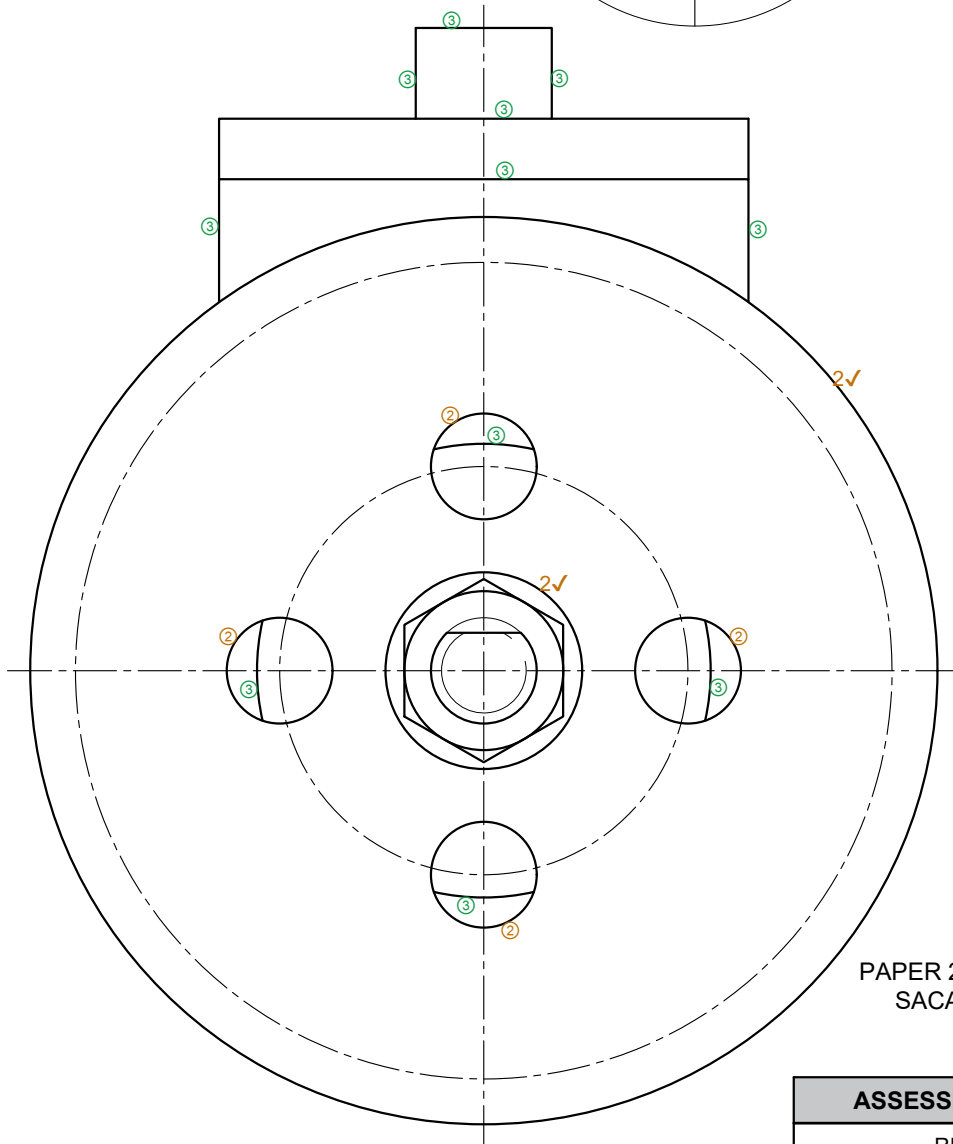
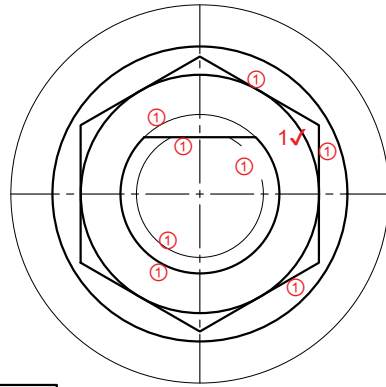
PAPER 2 QUESTION 3
SACAI NSC EXAM
MEMO

PAPER 2 QUESTION 4.1
SACAI NSC EXAM
MEMO



ASSESSMENT CRITERIA		
SECTIONAL FRONT VIEW		
1	GEAR	11
2	M14 NUT	4
3	CRANK SHAFT	11 ½
4	CONNECTING ROD	2 ½
5	PIN	1 ½
6	SHAFT	4 ½
7	HOUSING CAP	4 ½
8	M8 SCREW	5 ½
9	HOUSING	18
10	END CAP	4 ½
SUBTOTAL:		67 ½

MARK ALLOCATION
OF M14 NUT



PAPER 2 QUESTION 4.2
SACAI NSC EXAM
MEMO

1. CENTRE LINES
SANS COMPLIANT (LINE TYPE) 1
1 - 4 = ½; 5 - 8 = 1; 9 - 13 = 2 2
(INCLUDING PCD CL) 3
2. ASSEMBLY
1 MARK FOR EVERY COMPONENT
CORRECTLY ASSEMBLED
(10 parts - 1) = 9

ASSESSMENT CRITERIA		
RIGHT VIEW		
1	CRANK SHAFT + M14 NUT	5
2	GEAR	4
3	HOUSING + HOUSING CAP	5 ½
SUBTOTAL:		14 ½
GENERAL		
1	CENTER LINES	3
2	ASSEMBLY	9
SUBTOTAL:		12