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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

SOUTH AFRICAN COMPREHENSIVE ASSESSMENT INSTITUTE
SUID-AFRIKAANSE KOMPREENSIEWE ASSESSERINGSINSTITUUT

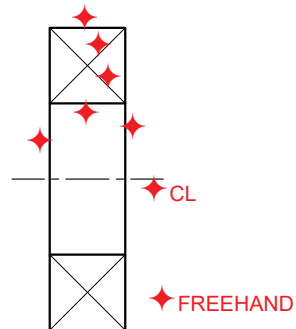
ANSWERS

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

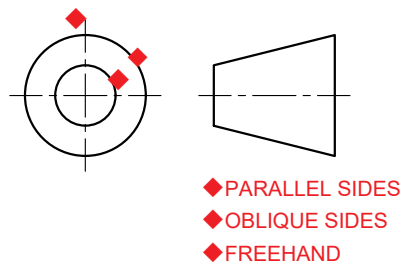
ANSWER 16
SHOULD BE DRAWN ON VIEW 2



ANSWER 17: BEARING



ANSWER 18: PROJECTION SYMBOL



PAPER 2 QUESTION 1
SACAI NSC EXAM
MEMO

PAPER 2 QUESTION 2
SACAI NSC EXAM
MEMO

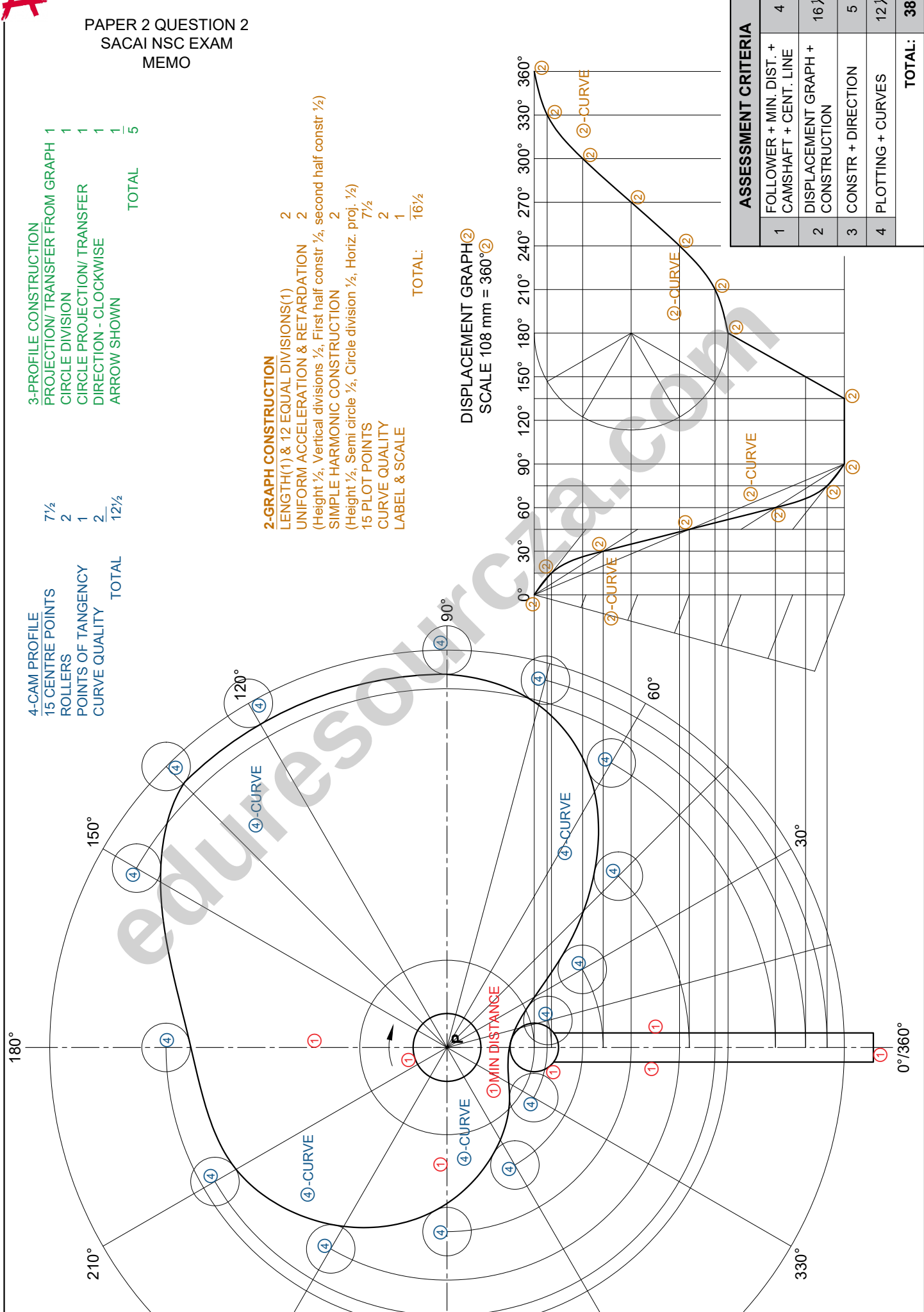
3-PROFILE CONSTRUCTION	
PROJECTION/ TRANSFER FROM GRAPH	1
CIRCLE DIVISION	1
CIRCLE PROJECTION/ TRANSFER	1
DIRECTION - CLOCKWISE	1
ARROW SHOWN	1
TOTAL	5

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

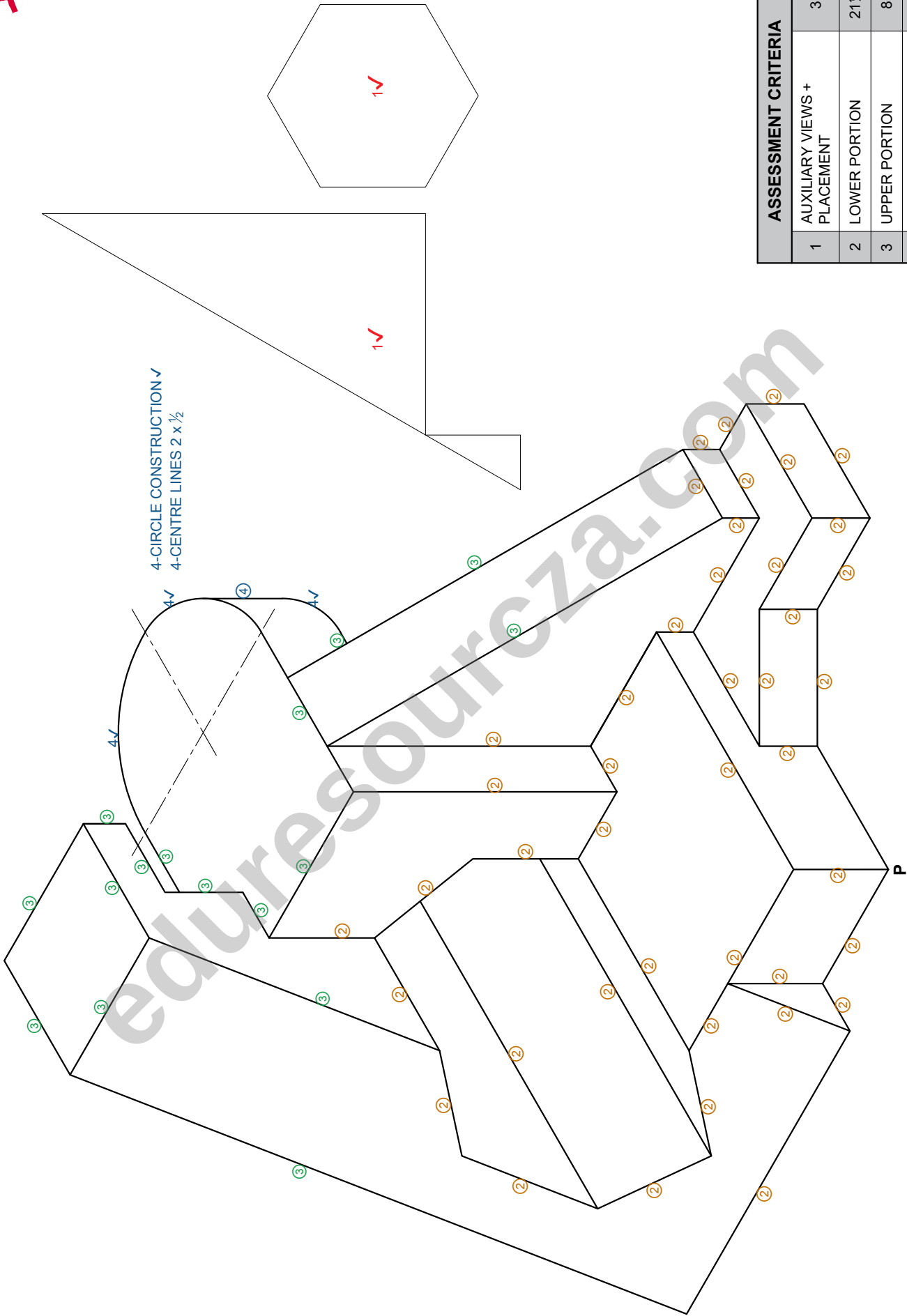
2-GRAPH CONSTRUCTION	
LENGTH(1) & 12 EQUAL DIVISIONS(1)	2
UNIFORM ACCELERATION & RETARDATION	2
(Height ½, Vertical divisions ½, First half constr ½, second half constr ½)	
SIMPLE HARMONIC CONSTRUCTION	2
(Height ½, Semi circle ½, Circle division ½, Horiz. proj. ½)	
15 PLOT POINTS	7½
CURVE QUALITY	2
LABEL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

DISPLACEMENT GRAPH
SCALE 108 mm = 360°

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



A+

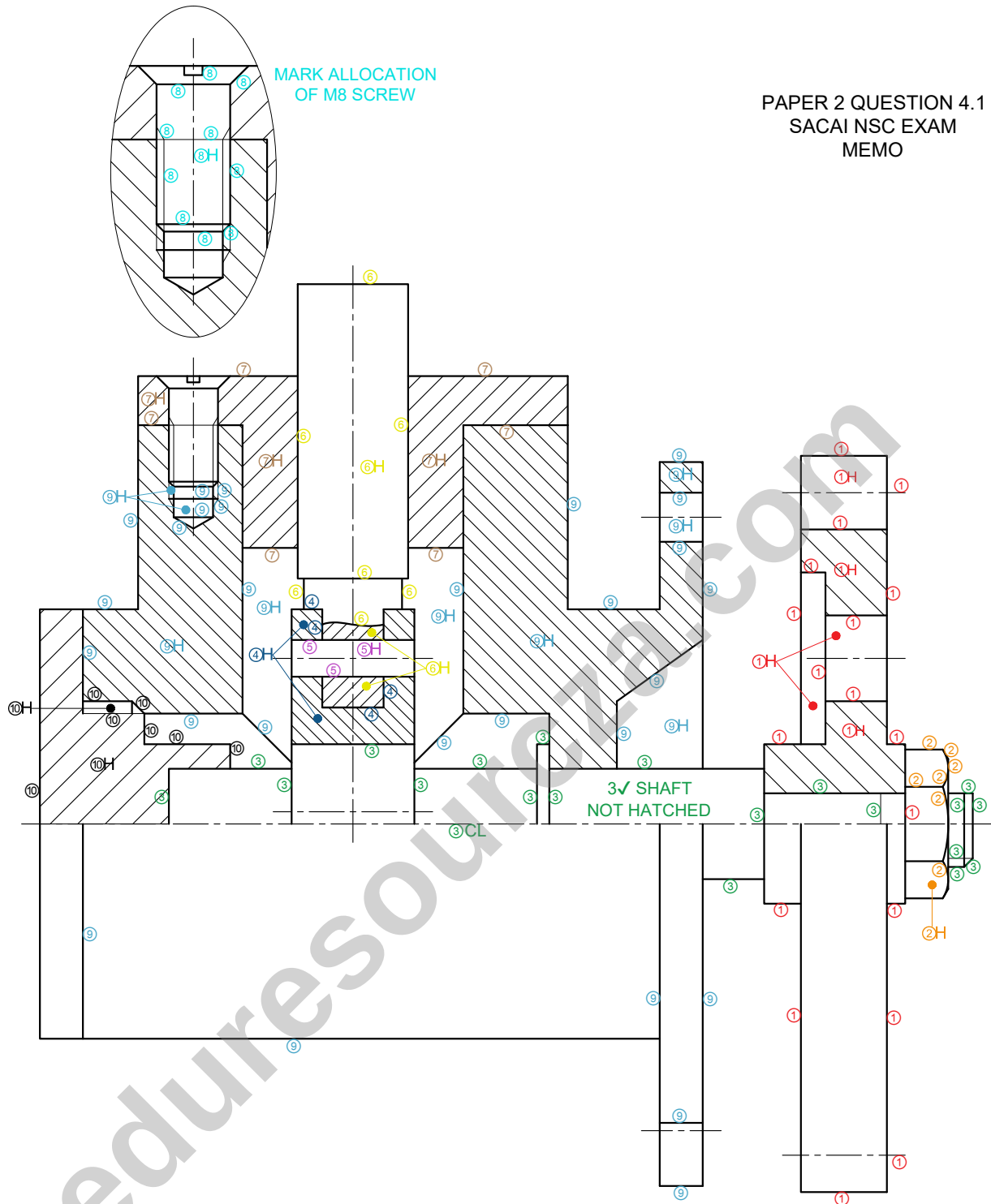


ASSESSMENT CRITERIA	
1	AUXILIARY VIEWS + PLACEMENT
2	LOWER PORTION
3	UPPER PORTION
4	CIRCLE+ CENTRE LINES + CONSTRUCTION
TOTAL:	

3	21½	8	5½	38
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PLACEMENT ①
ORIENTATION ①

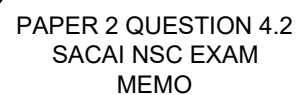
PAPER 2 QUESTION 4.1
SACAI NSC EXAM
MEMO



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


$$\begin{array}{r} 1 \\ 2 \\ \hline 3 \end{array}$$

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