

QUESTION 4: ASSEMBLY DRAWING

Given:

- The exploded isometric drawing of the parts of a gear and sump assembly, showing the position of each part relative to all the others.
- Orthographic views of each of the parts of the gear and sump assembly
- An example of the conventional representation of a spur gear

Instructions:

- Answer this question on page 6.
- Draw, to scale 1 : 1 and in third-angle orthographic projection, the following views of the assembled parts of the gear and sump assembly:

4.1 The half-sectional front view on cutting plane A-A. Show the left half in section, as seen from the direction of the arrow on the exploded isometric drawing. The cutting plane is shown on the top view of the spur gear (part 3).

4.2 The top view. Show only the top half of the view by applying the convention for the presentation of a symmetrical object.

NOTE:

- Planning is essential.
- ALL drawings must comply with the guidelines as contained in the SANS 10111.
- Show THREE faces of the M20 nut (part 1).
- Draw the conventional representation of the spur gear (part 3) in both views.
- NO hidden detail is required. [93]

PARTS LIST			
PART	QUANTITY	MATERIAL	
1	M20 NUT	1	MILD STEEL
2	WASHER	1	MILD STEEL
3	SPUR GEAR	1	CAST IRON
4	SHAFT	1	CAST IRON
5	BUSH	1	MILD STEEL
6	COLLAR PLATE	1	MILD STEEL
7	COLLAR	1	MILD STEEL
8	PIN	1	MILD STEEL
9	SUMP	1	CAST IRON
10	PLUG	1	CAST IRON
11	M8 SCREW	8	MILD STEEL

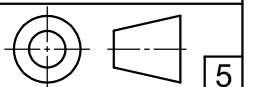
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GEAR AND SUMP ASSEMBLY

ALL DIMENSIONS ARE IN MILLIMETRES

ALL UNSPECIFIED RADII ARE 3 mm





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

ASSESSMENT CRITERIA					
TOP VIEW					
		POSSIBLE	OBTAINED	SIGN	MODERATED
1	GEAR	6			
2	COLLAR PLATE	$\frac{1}{2}$			
3	M20 NUT + WASHER	$4\frac{1}{2}$			
4	SYMMETRY	1			
SUBTOTAL		12			
SECTIONAL FRONT VIEW					
1	SUMP	$16\frac{1}{2}$			
2	PLUG	7			
3	COLLAR PLATE	$4\frac{1}{2}$			
4	BUSH	3			
5	COLLAR + PIN	5			
6	SHAFT	$9\frac{1}{2}$			
7	GEAR	10			
8	M20 NUT + WASHER	$6\frac{1}{2}$			
9	M8 SCREW	6			
SUBTOTAL		68			
GENERAL					
1	CENTRE LINES	3			
2	ASSEMBLY	10			
SUBTOTAL		13			
TOTAL		93			
PENALTIES (-)					
GRAND TOTAL					
EXAMINATION NUMBER					
EXAMINATION NUMBER					
6					

