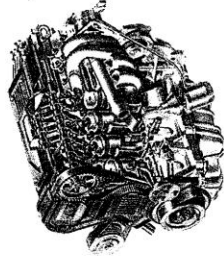
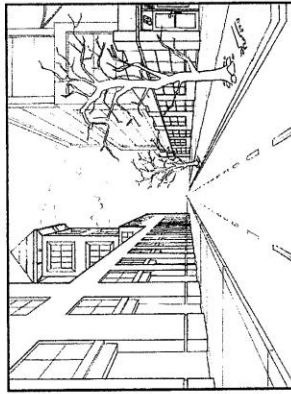


# HILLCREST HIGH SCHOOL

## ENGINEERING GRAPHICS AND DESIGN EXAM

### MIDYEAR EXAM



GRADE 11  
2019  
PAPER 2

**TIME: 2 hours**  
**Examiner: Mrs Tonkin**

**MARKS: 115**  
**Moderator: Mr Victor**

**NB: READ THE INTRUCTIONS**

1. This paper consists of 5 pages including the cover page and 3 questions.
2. Answer ALL questions.
3. Take note of the mark allocation in each question.
4. The questions must be answered on the answer sheets provided.
5. All the answer sheets must be **re-stapled** in **NUMERICAL** sequence and handed in irrespective of whether the question was attempted or not.
6. Time management is essential in order to complete all the questions.
7. Print your Name in the block provided on EVERY answer sheet.
8. All answers must be drawn accurately and neatly.
9. Any details or dimensions not given must be assumed in good proportion.

QUESTION	SECTION	MARK	MODERATE	MAXIMUM
1	MECHANICAL ANALYTICAL			22
2	ISOMETRIC			30
3	MECHANICAL ASSEMBLY			63
<b>TOTAL</b>				<b>115</b>
<b>SYMBOL</b>				<b>100</b>

NAME: \_\_\_\_\_  
TEACHER: \_\_\_\_\_



**QUESTION 2 : ISOMETRIC DRAWING**

Given:

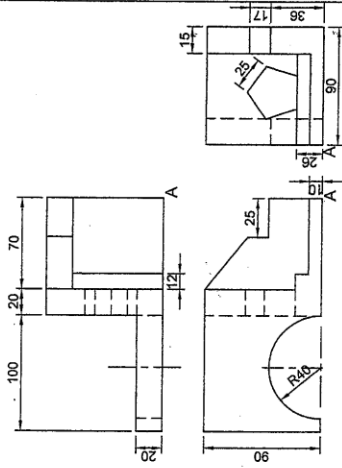
- The front view, top view and right view of a CASTING
- The position of point A on the drawing sheet

Instructions:

Using scale 1:1, convert the orthographic views of the CASTING into an ISOMETRIC DRAWING.

- Make A the lowest point of the drawing.
- Show ALL necessary construction.
- NO stencils may be used.
- NO hidden details are required.

[30]



ASSESSMENT CRITERIA	
1	AUXILIARY VIEWS 3
2	ISO LINES 17
3	NON-ISO LINES 5
4	SEMI-CIRCLE CONS 4
5	CENTRE LINES 1
TOTAL 30	

→ A

NAME: \_\_\_\_\_

**QUESTION 3 : MECHANICAL ASSEMBLY**

Given:

- An exploded isometric view of the parts of a PULLEY ASSEMBLY, showing the position of each part relative to all the others.

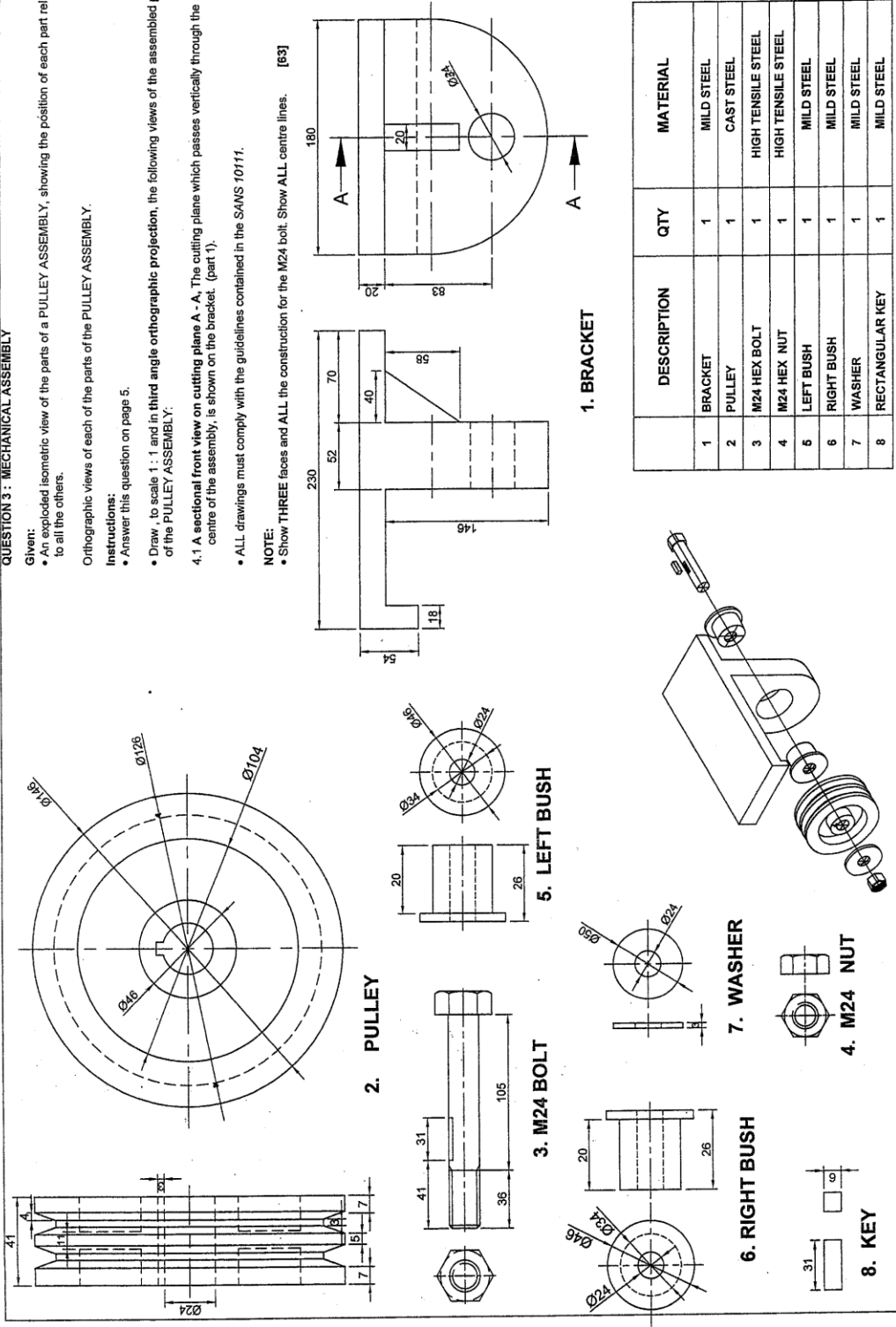
Orthographic views of each of the parts of the PULLEY ASSEMBLY.

Instructions:

- Answer this question on page 5.
- Draw, to scale 1 : 1 and in third angle orthographic projection, the following views of the assembled parts of the PULLEY ASSEMBLY:
- 4.1 A sectional front view on cutting plane A - A. The cutting plane which passes vertically through the centre of the assembly, is shown on the bracket. (part 1).
- ALL drawings must comply with the guidelines contained in the SANS 10111.

NOTE:

- Show THREE faces and ALL the construction for the M24 bolt. Show ALL centre lines. [63]



DESCRIPTION	QTY	MATERIAL
1 BRACKET	1	MILD STEEL
2 PULLEY	1	CAST STEEL
3 M24 HEX BOLT	1	HIGH TENSILE STEEL
4 M24 HEX NUT	1	HIGH TENSILE STEEL
5 LEFT BUSH	1	MILD STEEL
6 RIGHT BUSH	1	MILD STEEL
7 WASHER	1	MILD STEEL
8 RECTANGULAR KEY	1	MILD STEEL

QUESTION 3 : MECHANICAL ASSEMBLY

ASSESSMENT CRITERIA	
1 BRACKET	6
2 PULLEY	17
3 M24 HEX BOLT & NUT	18
4 KEY & WASHER	4
5 RIGHT + LEFT BUSH	4
6 HATCHING + NON-HATCHING	14
TOTAL	63

NAME