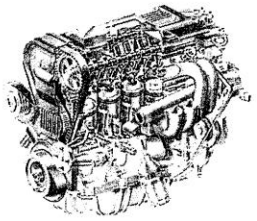
HILLCREST HIGH SCHOOL

ENGINEERING GRAPHICS AND DESIGN EXAM

NOVEMBER EXAM



GRADE 10
2018
PAPER 2

TIME: 2 hours
Examiner: Mrs Tonkin

MARKS: 130
Moderator: Mr Victor

NB: READ THE INTRUCTIONS

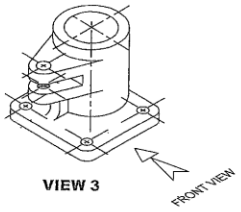
1. This paper consists of **6 pages** including the cover page and **4 questions**.
2. Answer **ALL** questions.
3. Take note of the mark allocation in each question.
4. The questions must be answered on the answer sheets provided.
5. All the answer sheets must be **re-stapled** in **NUMERICAL** sequence 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			25
2	TANGENCY			25
3	ISOMETRIC			32
4	MECHANICAL ASSEMBLY			48
	TOTAL			**130**
	SYMBOL			**100**

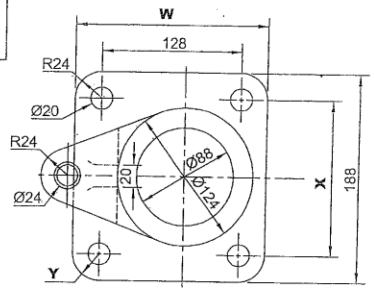
NAME:
TEACHER:

GIVEN:
The working drawing of a SUPPORT BRACKET, with a title block and a table of questions.

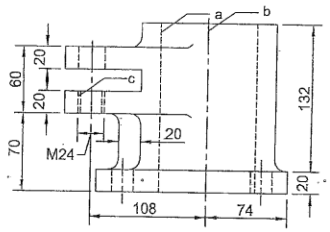
INSTRUCTIONS:
Complete the table below by neatly printing the answers to the questions, which all refer to the accompanying drawing and title block.



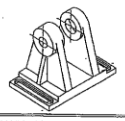
VIEW 3



VIEW 1



VIEW 2



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diyara@gmail.com
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DRAWN BY: MYEN	DRAWN DATE: 19 - 06 - 2011	MATERIAL: MILD STEEL	REVISION 1: DESIGN [22-05-2011]
CHECKED BY: MIKA	CHECKED DATE: 22 - 08 - 2011	NO REQUIRED: 340	REVISION 2: COLOUR [25-05-2011]
APPROVED BY: EDDIE	APPROVED DATE: 28 - 05 - 2011	SI UNIT: MILLIMETRES	TOLERANCES: ± 0,04
DRAWING NO: 2201 - NM	DRAWING SYSTEM: AutoCAD 2015	TITLE : SUPPORT BRACKET	MACHINING: $\sqrt{}$
REFERENCE NO: 4545 / 36YG	DRAWING SCALE: 1:5	Unspecified fillet radii : R4	MACHINING COMPANY: BAT PTY

1	What is the scale of the drawing ?		½
2	Who checked this drawing ?		½
3	On what date was this drawing approved ?		½
4	What is the name of this component ?		½
5	What is the email address of this company ?		½
6	When was DIYARA ENGINEERING established ?		½
7	Where is DIYARA ENGINEERING based ?		½
8	What is the drawing number ?		½
9	Why was the second revision done?		1
10	From what material is the component made ?		1
11	Identify view 1.		1
12	Identify view 2.		1
13	Determine the dimension at W ?		1
14	Determine the dimension at X ?		1
15	Determine the dimension at Y ?		1
16	What line type is used at a ?		1
17	What line type is used at b ?		1
18	What does C indicate?		1
19	What quantity must be manufactured ?		1
20	What drawing system was used ?		1
21	What type of drawing is shown at view 3 ?		1
22	What is the main function of this company ?		1
23	What is the website address of this company ?		1
24	How old is this company ?		1
25	What is the length of the component ?		1
26	What is the total height of the component ?		1
27	What system of projection has been used ?		1
28	Draw, freehand, the projection symbol ?		2

NAME

NAME

25
2

QUESTION 3

ISOMETRIC

Given:

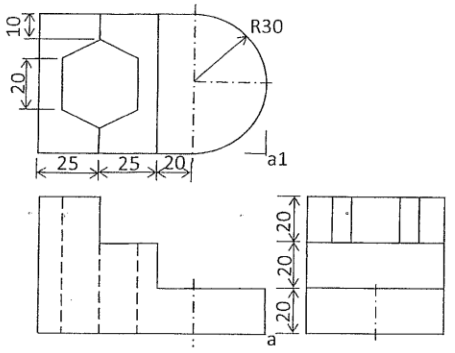
- The front, top and right views of a casting are shown in third-angle orthographic projection below.

Instruction:

- Draw an ISOMETRIC drawing of the casting.
- Make A your lowest point.

Note:

- Show all construction. **[32]**



ASSESSMENT CRITERIA			
1	ISOMETRIC LINES	25	
2	ISOMETRIC CIRCLE	6	
3	CENTRE LINES	1	
	TOTAL	**32**	

NAME:

QUESTION 4

MECHANICAL ASSEMBLY

Given:

- The exploded isometric drawing of the components of a roller assembly showing the position of each component relative to the others is shown.
- Also shown are the orthographic views of each of the components of the roller assembly.

Instruction:

Answer this question on page 6.

Draw to a scale of 1:1; in third-angle orthographic projection, the following views of the assembled components of the ROLLER ASSEMBLY:

- The **sectional front view,** as seen from the direction of the arrow in the exploded isometric drawing. The cutting plane passes through the centre of the assembly as shown on the bracket.

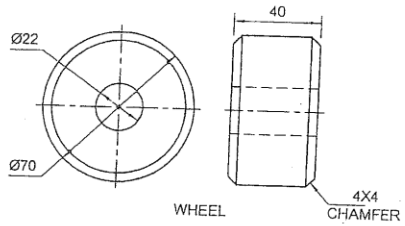
Note:

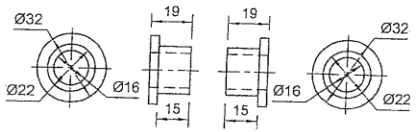
- Show 3 faces of the M12 Nut

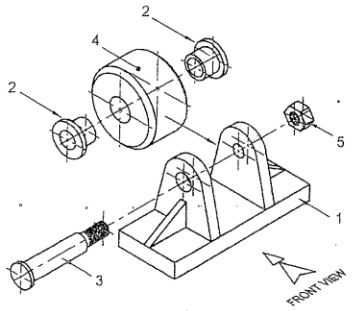
Add the following:

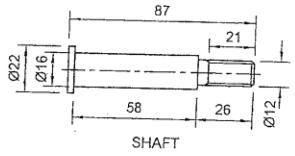
- Neatly label the sectioned view:
  SECTION A -A
- Neatly print the following title and scale below the drawing:
  ROLLER ASSEMBLY
  SCALE 1:1

[48]



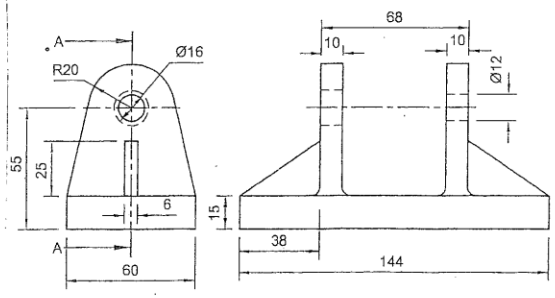






EXPLODED ISOMETRIC DRAWING

NO	DESCRIPTION	QTY
1	BRACKET	1 OFF
2	BUSH	2 OFF
3	SHAFT	1 OFF
4	WHEEL	1 OFF
5	M12 NUT	1 OFF
ROLLER ASSEMBLY		



BRACKET

QUESTION 4 MECHANICAL ASSEMBLY

ASSESSMENT CRITERIA			
1	BRACKET	9	
2	BUSH	4	
3	SHAFT	10½	
4	WHEEL	6	
5	M12 NUT	5	
6	HATCHING + NON-HATCHING	8½	
7	ASSEMBLY	3	
8	LABEL	1½	
9	CENTRE LINES	½	
	TOTAL	**48**	

NAME: