#### SHEET 1

#### LABASA SANGAM (SKM) COLLEGE

#### SUPPLEMENTARY WORKSHEET

#### **BASIC TECHNOLOGY - YEAR: 10 - 2021**

NAME:	
Year: _	

#### **MULTIPLE CHOICE**

### [10 MARKS]

- 1. Hazards and unsafe working conditions in the workshop should
  - A. be reported after class
  - B. be reported immediately
  - C. be left for the supervisor to attend
  - D. not be reported if no accidents has taken place
- 2. Which of the following symbols is used to represent a **wall mounted lamp**?
  - A. X
- В. |---
- c. X
- D.



- 3. The figure shown on the right would represent a
  - A. Pictorial marks
  - B. Letter marks
  - C. Combination mark
  - D. Mascot logo

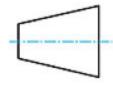


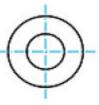
- 4. A circle will appear on an isometric drawing as a(n)
  - A. ellipse
  - B. egg
  - C. circle
  - D. semi-circle
- 5. The principle of design used by the designer to draw attention to an area or subject is known as
  - A. unity
  - B. variety
  - C. rhythm
  - D. emphasis

- 6. Which one of the following characteristics is widely regarded as being an important aspect of sustainable development?
  - A. Inter-generational equity
  - B. Increasing consumption expenditure
  - C. Intra-generational inequity
  - D. Increased levels of saving
- 7. The diagram shown below is drawn in
  - A. one point perspective
  - B. isometric
  - C. two point perspective
  - D. oblique



- 8. The **main** disadvantage of using cavalier oblique projection is that the diagram
  - A. looks distorted
  - B. is difficult to understand
  - C. is drawn using a special scale
  - D. shows only half of the width on the receding side
- 9. The symbol shown below is of a
  - A. first angle orthographic projection
  - B. second angle orthographic projection
  - C. third angle orthographic projection
  - D. Fourth angle orthographic projection





- 10. The diagram on the right shows an example of
  - A. traditional farming
  - B. traditional architecture
  - C. traditional navigation
  - D. traditional recycling



### GENERAL KNOWLEDGE

**(10 marks)** 

# Part A Matching (5 marks)

Mach the terms in **list A** with the correct descriptions in **list B**. Write the <u>LETTER</u> representing the term in the box beside the matching description. Do not write a **letter twice**.

List A						
A. Hand tool safety	B. Bench hook					
C. Investigation	D. Orthographic					
E. Human error	F. Safe working conditions					
G. Varnish	H. Brainstorming					

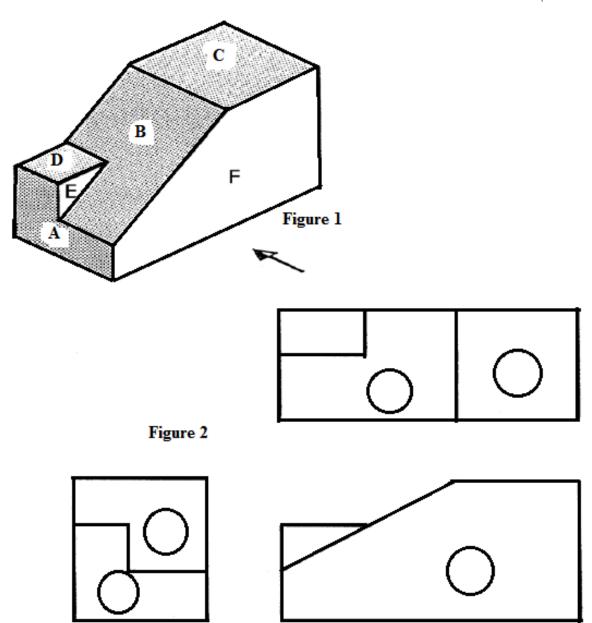
	ANSWER	
1	Is a cause of most injuries in a workshop	
2	Uncongested working area	
3	Collecting information	
4	Shows plan, front elevation and end elevation of an object	
5	Stimulates further idea	

## PART B SURFACE LABELING

(5 marks)

The faces of the isometric view of a given multi-shaped block are indicated by letters in **Figure 1**.

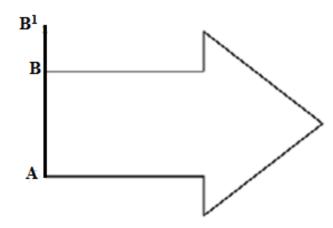
Write the correct letters in the circles in **Figure 2** to match their corresponding faces in **Figure 1**. (5 marks)



## **GEOMETRICAL CONSTRUCTION**

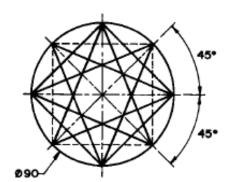
[12 marks]

(a) The figure shows a direction arrow. Draw a similar arrow with height AB increased to  $AB^1$ . (3 marks)



(b)Given on the right is a pattern. Redraw the pattern to full size on the center line provided using the measurements given in the pattern.

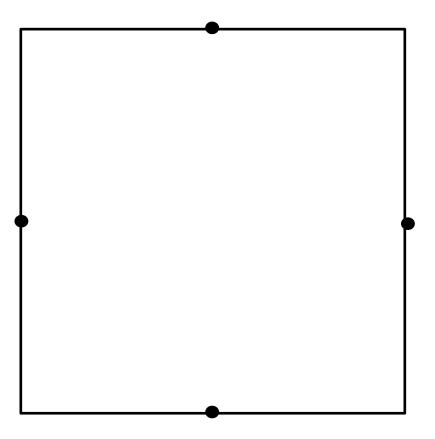
(3 marks)

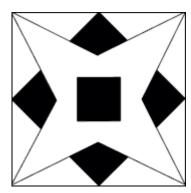


(C) Given: A picture of a design pattern below.

**Required:** Redraw the design pattern inside the circle given below.





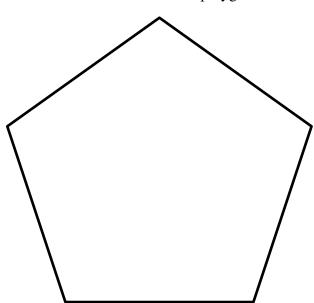


## ENLARGEMENT AND REDUCTION

(d)Given below is a polygon.

Reduce the overall dimensions of the polygon to a scale of 4:5 starting at **A**.

[3 marks]



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# QUESTION 1 DESIGN [10 marks]

### **Problem:**

A common problem faced in school workshops is the difficulty in collecting small scrap metals and dust from the workstations at the end of each class.

## **Design brief:**

Design a device that can be used to efficiently collect scrap metals and dust from the benches and the floor in the workshop.

# **Specifications:**

The following factors are to be considered when designing the device.

- The device should be strong.
- It should be durable.
- It should have a handle.
- It should be made from locally available materials.
- It should be safe to use.
- It could be constructed in the school workshop.

### **Requirements:**

1. In the space provided below, sketch a pictorial pencil / colour rendered **final solution** of the device. Label the parts. (4 marks)

Proportion	1/2	Line work	1	Accuracy	1	
Proportion Rendering shown	1	Neatness	1/2			
				•		

2. Show with the help of sketches to show how the handle is attached to the device and explain briefly a feature of traditional design in the design (3 marks)

Proportion	1/2	Line work	1	
Labeling	1	Clarity	1/2	
				(2 mai
				(2 mai
of tradition				

\_\_\_\_\_\_(1 mark)

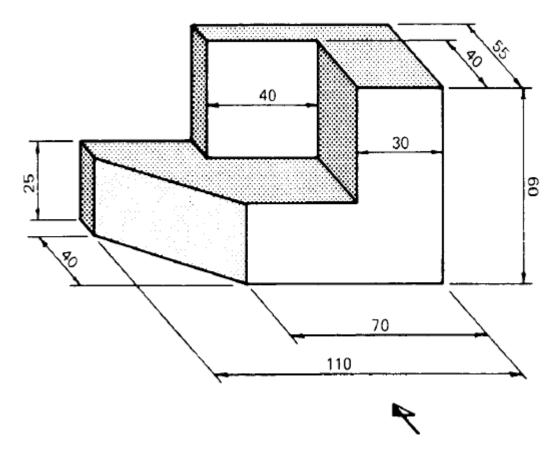
]	Evaluate the final solution	(2 marks)	
	Heading	Final solution	
	Materials used		
	Ergonomics		

Using the cradle-to-cradle analysis, explain how the device does not have any adverse impact the					
environment.	(1 mark)				

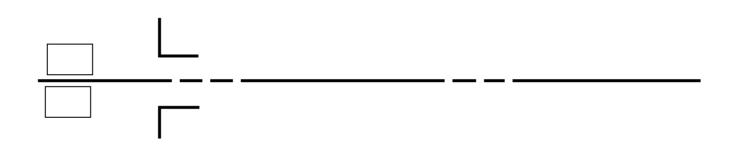
## **ORTHOGRAPHIC DRAWING** (10 marks)

Given: Required: A simple **shaped block** drawn in oblique, the reference line and the starting corners By using the measurements provided in the oblique drawing, answer the following questions:

- i. Label all the visible faces of the **shaped block** on the oblique drawing with **letters**. (2 marks)
- ii. Draw the Plan and Elevation of the **shaped block** in 1<sup>st</sup> Angle Orthographic Projection. (7 marks)
- iii. Label the reference line correctly using **VP** and **HP**. (1 mark)



All measurements in millimeters



# SHEET 6

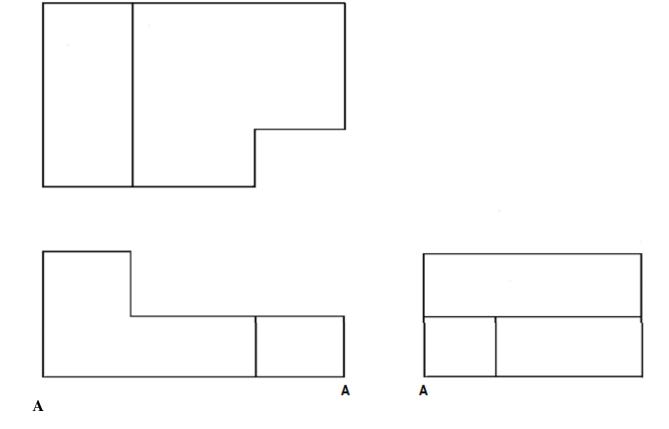
# ISOMETRIC DRAWING

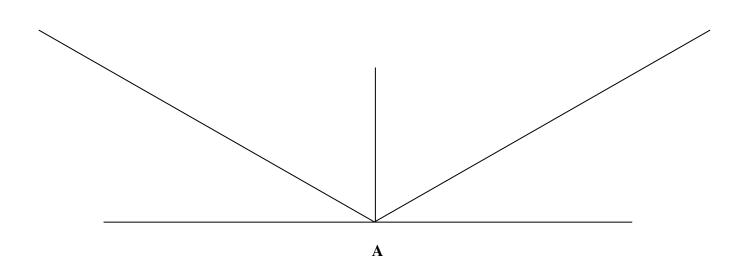
**(10 marks)** 

Given: A simple shaped block drawn in 3<sup>rd</sup> angle orthographic projection and the starting point A.

**Required:** By taking measurements directly from the orthographic drawing, answer the following questions given below:

- i. Label all the visible faces of the **Shaped Block** on the orthographic drawing with **letters**. (2 marks)
- ii. Draw the **shaped block** in isometric drawing using the starting point **A** given below. (8 marks)





# SHEET 7

OBLIQUE DRAWING

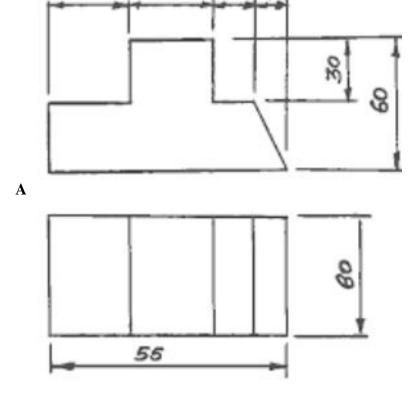
**(10 marks)** 

Given: A simple shaped block drawn in 1<sup>st</sup> angle orthographic projection and the starting point A.

**Required:** By taking measurements directly from the orthographic drawing, answer the following questions given below:

i. Label all the visible faces of the Shaped Block on the orthographic drawing with letters. (2 marks)

ii.Draw the **shaped block** in oblique drawing using the starting point **A** given below. (8 marks)



20

20

