## LABASA SANGAM (SKM) COLLEGE <br> SUPPLEMENTARY WORKSHEET <br> BASIC TECHNOLOGY - YEAR: 10-2021

NAME: $\qquad$ -

## 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.
B. $\longmapsto$
C.

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


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## Part A

## Matching

(5 marks)
Mach the terms in list A with the correct descriptions in list B. Write the $\boldsymbol{\text { LETTERR}}$ representing the term in the box beside the matching description. Do not write a letter twice.

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


| List B |  | 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 |  |

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)


Figure 2


## GEOMETRICAL CONSTRUCTION

[12 marks]
(a) The figure shows a direction arrow. Draw a similar arrow with height $\mathbf{A B}$ increased to $\mathbf{A B}{ }^{\mathbf{1}}$.
(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 $\mathbf{A}$
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)

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

| Proportion | $1 / 2$ |  | Line work | 1 |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Labeling | 1 | Clarity | $1 / 2$ |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

Feature of traditional design: $\qquad$
3. Evaluate the final solution under the following heading. (1 mark)
3. Evaluate the final solution under the following heading.

| Heading | Final solution |
| :---: | :---: |
| Materials used |  |
| Ergonomics |  |

4. Using the cradle-to-cradle analysis, explain how the device does not have any adverse impact the environment.
$\qquad$
$\qquad$
$\qquad$

## Given: <br> Required:

ORTHOGRAPHIC DRAWING (10 marks) 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 $1^{\text {st }}$ Angle Orthographic Projection.
(7 marks)
iii. Label the reference line correctly using VP and HP
(1 mark)


All measurements in millimeters


## SOMETRIC DRAWING (10 marks)

## Given: A simple shaped block drawn in $3^{\text {rd }}$ angle orthographic projection and the starting point $\mathbf{A}$

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 $\mathbf{A}$ given below. (8 marks)


A


## OBLIQUE DRAWING

(10 marks)

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 $\mathbf{A}$ given below.
(8 marks)



