

**GHANA EDUCATION NEWS (GEN MOCK)**

**HOME MOCK SEPTEMBER 2022**

**PRE TECH SKILLS 1 & 2**



Name.....

Index Number.....

**GHANA EDUCATION NEWS (GEN MOCK)**

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**GHANA EDUCATION NEWS MOCK – SEPTEMBER 2022 EDITION**

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**PERFORMANCE BOOSTER - MOCK NUMBER 4**

**SEPTEMBER 2022**

**PRE TECHNICAL SKILLS**

**1 Hr 45 MIN**

*Do not open this booklet until you are told to do so. While you are waiting, read and observe the following instructions carefully. Write your name and index number in ink in the spaces provided above.*

*This booklet consists of two papers; I and II. Answer Paper 2 which comes first in your answer booklet and Paper 1 on your Objective Test answer sheet. Paper 2 will last for 1 hr after which the answer book let will be collected. Do not start Paper until you are told to do so. Paper 1 will last 45 MINS .*

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**TURN OVER**

# BASIC DESIGN AND TECHNOLOGY 2

## (Pre-Technical Skills 2)

### Essay

1 hour 15 minutes

#### SECTION A (CORE SKILLS)

[20 marks]

Answer question 1 [COMPULSORY]

1. (a) (i) Define a *poster* [2 marks]
- (ii) Give **two** reasons why poster is important in advertisement. [2 marks]
- (iii) List **two** types of poster [2 marks]
- (iv) State **one** major difference between the **two** types of poster [1 mark]
- (b) A unit for hanging school uniforms is to be designed and made in the school workshop.
- (i) State **two** places where the unit would be placed in the workshop.
- (ii) State **two** specifications of the unit based on construction;
- (iii) Name **one** specific material to be used for making the unit.
- (c) List **four** stitches that can be used for neatening as well as embroidery work [4 marks]
- (d) List **four** dishes which are easily contaminated

**SECTION B**  
**[50 marks]**

*Answer **two** questions **only** from this section*  
*All questions carry equal marks*

2. (a) Figure 1 shows the isometric view of a wooden stand.

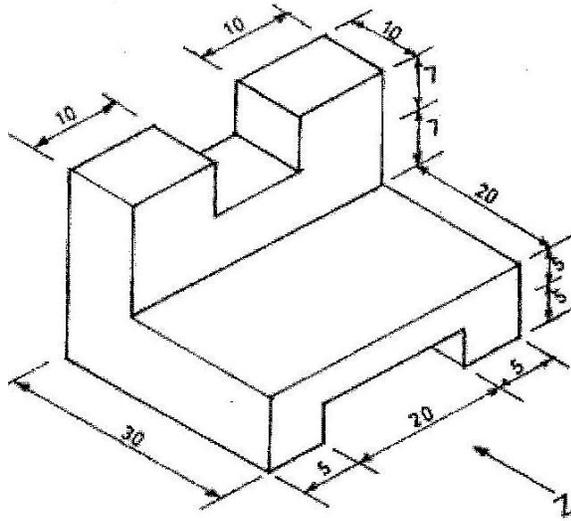


Figure 1

- (i) Draw full size the front view in the direction of arrow Z
- (ii) State the most suitable abrasive that can be applied on the work.
- (b) State **one** method of preventing pinning in files
- (c) (i) Make a freehand pictorial sketch of the wooden float.  
(ii) Label any **two** parts of the tool sketched in (c)(i)  
(iii) State **one** use of the wooden float
- (d) (i) State **one** way of preventing accidents in the workshop  
(ii) State **two** qualities of a good mortar  
(iii) Explain the ration 1:6 in a mortar mix
3. (a) State **one** reason why personal safety should be observed in the workshop.
- (b) List **two** specific tools for carrying out **each** of the following operations:  
(i) setting-out a wall;  
(ii) moulding bricks;  
(i) cutting a tenon from a piece of wood;  
(ii) soldering sheet metals.
- (c) (i) Make a freehand pictorial sketch of a rasp file

(ii) Label any two parts of the tool sketched in (c)(i) above.

(i) State **one** use of the rasp file.

(d) (i) State the **main** difference between a brick and a block.

(ii) List the two **main** materials for making sandcrete blocks.

4. (a) Explain the following

(i) ratio 1:4 for mortar mixture;

(ii) non-ferrous alloys

(b) (i) Make a freehand pictorial sketch of a flat screwdriver

(ii) Label two parts of the tool you sketched in (b)(i) above

(iii) State one main use of the tool you sketched in (b)(i) above.

(c) (i) Add three more courses to the wall in Figure 2

(ii) Show a toothing end on the wall

(iii) List two tools for laying the wall

(iii) State one reason for intruding a half-bat in the wall.

# BASIC DESIGN AND TECHNOLOGY 1

## (Pre-Technical Skills 1)

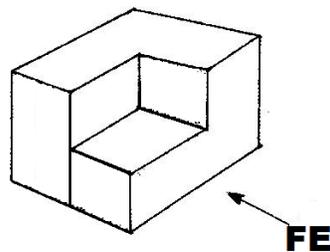
### Objective Test

#### 40 minutes

1. Portion control equipment include
  - A. sauce boat
  - B. oval plate
  - C. casserole
  - D. ladle
2. Short dashes are used for
  - A. cutting planes
  - B. hidden outlines
  - C. dimensioning
  - D. visible outlines
3. Missing nails in household furniture occur in
  - A. concrete benches
  - B. metal tables
  - C. plastic cabinets
  - D. wooden chairs
4. The **best** seam for children's dress is
  - A. French seam
  - B. open seam
  - C. overlaid seam
  - D. welt seam
5. Preliminary sketches help the artist to
  - A. increase his drawings
  - B. gather required materials
  - C. get the required form
  - D. make the product last longer
6. A **common** method of cooking ripe plantain for sale is
  - A. boiling.
  - B. roasting.
  - C. grilling.
  - D. baking.

7. The visitors book signed at exhibitions helps the exhibitor to know
- A. the number of people who came
  - B. how many works were sold
  - C. the number of people who showed interest
  - D. what people observed about the work
8. A sketch is a
- A. collection of different lines
  - B. drawing made with pencil
  - C. finished detailed drawing
  - D. quick drawing in few lines
9. Shading with lines is described as
- A. cross hatching
  - B. hatching
  - C. stippling
  - D. tonal value
10. Select a neutral colour from the options below
- A. blue
  - B. orange
  - C. red
  - D. white
11. Which of the sets are temporary stitches?
- A. Basting and tacking
  - B. Hemming and basting
  - C. Tacking and hemming
  - D. Tacking and running

The figure below is a wooden block. Use it to answer question 12 and 13



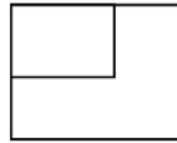
12. Which of the following views represent the plan?



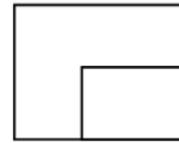
A



B



C



D

13. The left-end view is represented by



A



B

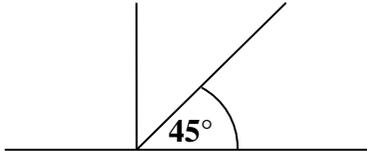


C



D

14. Figure 1 illustrates the principle of



- A. oblique axes
- B. perspective axes
- C. isometric axes
- D. orthographic axes

15. A vertical line is associated with

- A. movement
- B. rest
- C. stability
- D. uncertainty

16. Which of the following products is obtained when the sides **MN** is soldered to **OP**?

- A. Chalk box
- B. Match box
- C. Milk tin
- D. Watering can

17. Which of the following tools is used to produce heat to join the sides?

- A. Folding bar
- B. Snips
- C. Soldering iron
- D. Torch

18. The type of aggregate that passes through a 5 mm wire mesh is
- A. clay.
  - B. laterite.
  - C. sand.
  - D. stone.
19. Which of the following tools is suitable for pairing on wood?
- A. Cross-cut saw
  - B. Firmer chisel
  - C. Mortise chisel
  - D. Rip saw
20. The **main** difference between bricks and blocks is that
- A. bricks are smaller than blocks
  - B. blocks are smaller than bricks
  - C. bricks are made of clay
  - D. blocks are made of laterite
21. Which of the following protective clothing is used to protect the eyes when grinding a cold chisel?
- A. Gloves
  - B. Goggles
  - C. Helmet
  - D. Mask

Use figure 3 (below) to answer questions 22 and 23

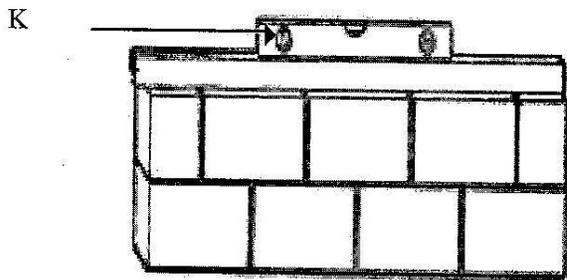


Fig. 3

22. Figure 3 shows the process of
- A. checking the height of a wall
  - B. levelling a wall
  - C. plumbing a wall
  - D. setting out a wall
23. The tool labelled K is called
- A. gauge rod
  - B. tamping rod
  - C. straight edge
  - D. spirit level

24. Which of the following is **not** a property of aluminium?
- A. Light in weight
  - B. It corrodes
  - C. Absorbs heat readily
  - D. It is a good conductor of electricity
25. In furniture works, joints which have to be disconnected at certain times can be described as
- A. permanent joints
  - B. immovable joints
  - C. movable joints
  - D. temporary joints
26. Which of the following tools are used for boring wood?
- A. brace and bit
  - B. mortice chisel and mallet
  - C. hammer and cold chisel
  - D. hammer and centre punch
27. The first step to be taken when checking a socket outlet for a fault is to
- A. open the socket outlet
  - B. switch off power at the main switch
  - C. test the socket outlet
  - D. remove the main fuse

*Use the figure below to answer questions 28 to 30*



28. The figure is a
- A. rule
  - B. tee square
  - C. try square
  - D. set square
29. The part labeled X is called
- A. blade
  - B. lead
  - C. set
  - D. stock

- 30.** The tool shown in the figure is used to
- A. draw horizontal lines
  - B. draw vertical lines
  - C. set variable angles
  - D. measure horizontal lines

***END OF PAPER ONE***

# MARKING SCHEME FOR SEPTEMBER 2022

## BASIC DESIGN AND TECHNOLOGY 1 (Pre-Technical Skills 1)

### Objective Test

### ANSWERS

1. D. ladle
2. B. hidden outlines
3. D. wooden chairs
4. A. French seam
5. C. get the required form
6. C. grilling
7. D. what people observed about the work
8. D. quick drawing in few lines
9. B. hatching
10. D. white
11. A. Basting and tacking
12. A. 
13. C. 
14. A. oblique axes
15. C. stability
16. C. Milk tin
17. C. Soldering iron
18. C. sand
19. C. Mortise chisel
20. A. bricks are smaller than blocks
21. B. Goggles
22. B. levelling a wall
23. D. spirit level
24. B. It corrodes
25. C. movable joints
26. A. brace and bit
27. B. switch off power at the main switch
28. B. tee square
29. D. stock
30. A. draw horizontal lines

# BASIC DESIGN AND TECHNOLOGY 2

## (Pre-Technical Skills 2)

### Essay

## ANSWERS

1. (a) (i) **Define a poster**

A written or printed message on a fairly large sheet of paper used to announce events and advertise goods and services

OR

It is a notice or advertisement that informs the public

[2 marks]

(ii) **Give two reasons why poster is important in advertisement.**

- It provides information to the public
- It educates the public
- It announces important events to the public
- It promotes sales / patronage.

[2 marks]

(iii) **List two types of poster**

- Pictorial
- Fully text / non-pictorial / texture poster / unwritten poster

[2 marks]

(iv) **State one major difference between the two types of poster**

Pictorial combines drawing or photographs with text, while fully text has no illustration at all

[1 marks]

(b) **A unit for hanging school uniforms is to be designed and made in the school workshop.**

[7 marks]

(i) **State two places where the unit would be placed in the workshop.**

(Mention any **two** of the following)

- In the wardrobe
- On the wall

- Partition bar
- Behind the door
- On the window frame
- Rod
- Pipe
- Hanger

**(ii) State two specifications of the unit based on construction;**

(Mention any **two** of the following)

- Must be strong
- Should take more uniforms at a time
- Corrosive resistant
- Screwed
- Portable
- Joints

**(iii) Name one specific material to be used for making the unit.**

(Mention any **one** of the following)

- Odum
- Sapele
- Wawa
- Raffia palm
- Cane
- PVC (acrylic)

**(c) List four stitches that can be used for neatening as well as embroidery work. [4 marks]**

- Loop / blanket stitches
- Herringbone stitches
- Buttonhole stitches
- Machine stitches
- Back stitches
- Overcasting
- Crotcheting

**(d) List four dishes which are easily contaminated [2 marks]**

- Sauces
- Gravies
- Bread pudding
- Vegetable turnovers

- Soups
- Meat turnovers
- Fish turnovers
- Milk dishes
- Vegetable salad
- Fruits salad

NB: any other protein food

**SECTION B**  
**[50 marks]**

2. (a) Figure 1 shows the isometric view of a wooden stand.

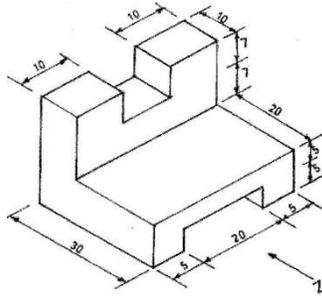
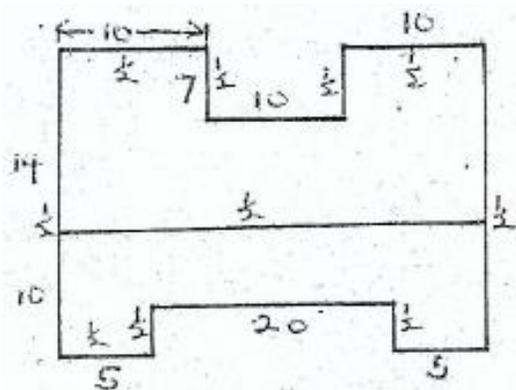


Figure 1

(i) Draw full size the front view in the direction of arrow Z

Drawing 7 horizontal lines and 6 vertical lines neatly



(ii) State the most suitable abrasive that can be applied on the work.

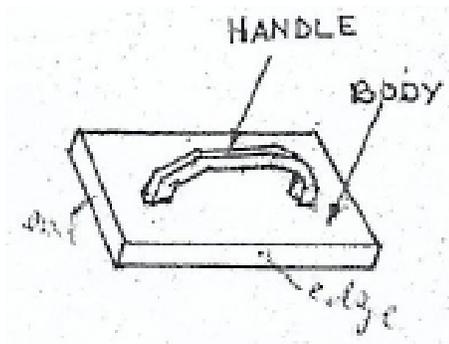
Glass paper  
Sandpaper

(b) State one method of preventing pinning in files

Rubbing chalk on the file

(c) (i) Make a freehand pictorial sketch of the wooden float.

(ii) Label any two parts of the tool sketched in (c)(i)



(iii) State one use of the wooden float

- For rendering
- For plastering
- For filling mortar joints
- For holding mortar
- For screeding
- For dressing
- For spreading

(d) (i) State one way of preventing accidents in the workshop

- Wear protective clothing
- Avoid horse play
- Use right tool for the right job
- Avoid spilling oil on the floor

(ii) State two qualities of a good mortar

- workable
- free from impurities
- plastic / flexible
- uniform colour
- correct quantity of binding agents
- set within stipulated time

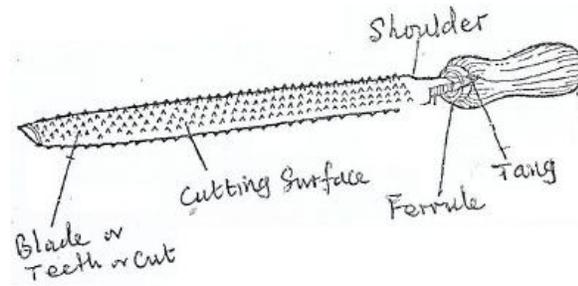
(iii) Explain the ration 1:6 in a mortar mix

It means one part of cement to six parts of sand.

or

Six parts of sand to one part of cement

3. (a) State **one** reason why personal safety should be observed in the workshop.
- To avoid injury
  - To prevent accident
- (b) List **two** specific tools for carrying out **each** of the following operations:
- (i) setting-out a wall;
- Line and pins
  - Straight edge
  - Builder's square
  - Profile Boards
  - Spirit Level
  - Tape measure / surveyor's tape
  - Pegs
  - Piece of chalk
- (ii) moulding bricks;
- Mould box
  - Head pan / gauge box / wheel barrow
  - Shovel / spade
  - Tamping rod
  - Pick Axe
- (i) cutting a tenon from a piece of wood;
- Try square
  - Marking gauge / mortise gauge
  - Pencil / Marking knife
  - Tenon Saw
  - Mallet
  - Bevel-edged chisel / firmer chisel
- (ii) soldering sheet metals.
- Soldering iron / bit
  - Coal pot / stove / blow lamp
  - File / emery cloth
  - Shears / pair of snips
  - Mallet
  - Folding bar
- (c) (i) Make a freehand pictorial sketch of a rasp file



(ii) Label any two parts of the tool sketched in (c)(i) above.

- Blade / teeth / cut
- Tang
- Ferrule
- Handle
- Shoulder

(i) State **one** use of the rasp file.

- For smoothening edges and shapes
- For shaping a circular piece of wood

(d) (i) State the **main** difference between a brick and a block.

- The size: A block is bigger than a brick
- The weight: A block is heavier than a brick
- The material: A block is made of concrete whilst brick is made of clay

(ii) List the two **main** materials for making sandcrete blocks.

- Sand
- Cement

4. (a) Explain the **following**

(i) ratio 1:4 for mortar mixture;

One part of cement to be mixed with four parts of sand.

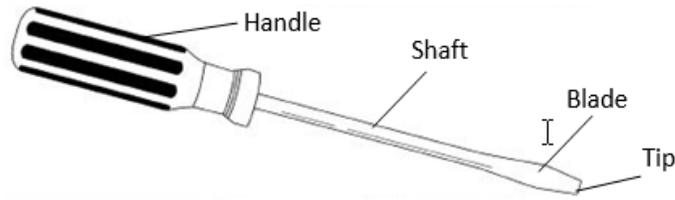
(ii) non-ferrous alloys

Non ferrous alloys are alloys that do not contain iron

OR

Non ferrous alloys are uniform mixtures of metals that do not contain iron

(b) (i) Make a freehand pictorial sketch of a flat screwdriver



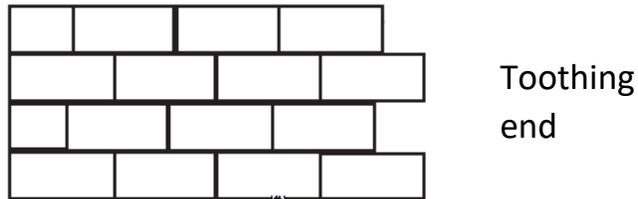
(ii) Label **two** parts of the tool you sketched in (b)(i) above

- Handle
- Shaft
- Blade
- Tip

(iii) State one main use of the tool you sketched in (b)(i) above.

It is used to drive in / tighten and drive out / loosen screws into/out of work peices

(c) (i) Add three more courses to the wall in Figure 2



(ii) Show a toothing end on the wall

(iii) List two tools for laying the wall

- hand trowel
- spirit level
- float
- gauge rod
- straight edge
- mortar board
- line and pins
- brick hammer / comb hammer
- bolster and club hammer
- builder's square

(iii) State one reason for intruding a half-bat in the wall.

To avoid continuous vertical joints