

CERAMICS 2

1. GENERAL COMMENTS

The standard of the paper this year is comparable to the previous years. The items were a good reflection of the teaching syllabus for ceramics.

The performance of the candidates this year was average.

2. SUMMARY OF CANDIDATES' STRENGTHS

The Chief examiner identified these strengths in candidates' responses:

- (i) Candidates demonstrated their competencies in traditional firing and ceramic production.
- (ii) Most candidates were able to describe sequentially ceramic processing techniques.
- (iii) Candidates could present in orderly manner the steps involved in open pit firing.
- (iv) Majority of the students are gaining mastery of the content areas in ceramics.

3. SUMMARY OF CANDIDATES' WEAKNESSES

The Chief Examiner noted the following weaknesses:

- (i) Most candidates were unable to explain and give the importance of test tiles.
- (ii) Some of the candidates failed to use technical terms in their write-ups.
- (iii) Most candidates could not differentiate between a teapot and a coffee pot.

4. SUGGESTED REMEDIES

- (i) Candidates should familiarize themselves with terminologies in the Ceramic industry.
- (ii) Teachers should do more demonstration lessons.
- (iii) Teachers should give more drawing exercises to enhance candidates drawing skills.

5. DETAILED COMMENTS

Question 1

(a) Explain test tiles in Ceramics.

(b) Explain three reasons why test tiles usage is important in Ceramics

In question 1(a) Candidates were expected to define test tiles in ceramics. Very few candidates attempted this question. Most candidates seem not to be familiar with the term test tiles. Test pieces or test slabs would have been more familiar to the candidates.

Some candidates confused test tiles with textiles as a visual art course and others tiles as used in structural ceramics. This lack of comprehension of the demands of the question led to the underperformance of most candidates.

The responses expected by the candidates were;

CERAMICS 3

Question 1

**Design and throw one teapot and two tea cups. Decorate appropriately.
The finished work must be fired.**

Demands

The final sketch should be translated into the project by using appropriate tools/materials/equipment and techniques as follows:

- (i) Tools/Equipment: e.g. scraper, cutting wire, sponge/foam, potter's wheel, etc.
- (ii) Materials: e.g. clay/clay bodies, slip, oxides, etc.
- (iii) Preparation of materials by wedging, kneading clay/clay bodies, etc.
- (iv) Formation of teapot and cups by throwing on the potter's wheels as follows:
 - placing of clay on the wheel head;
 - opening of centred clay;
 - pulling to the required size, height and shaping as desired;
 - turning when it is leather-hard.

Performance

This question was most unpopular due to lack of adequate facility for throwing and also the number of tasks involved. Most pots and cups produced by the candidates were heavy and the rims of tea cups were too thick making it difficult and uncomfortable to drink from it.

Question 2

Design and produce a decorative frame for a wall clock to be used in the staff common room of a school.

Dimension: The widest size should be 15 cm.

The finished work must be fired.

Demands

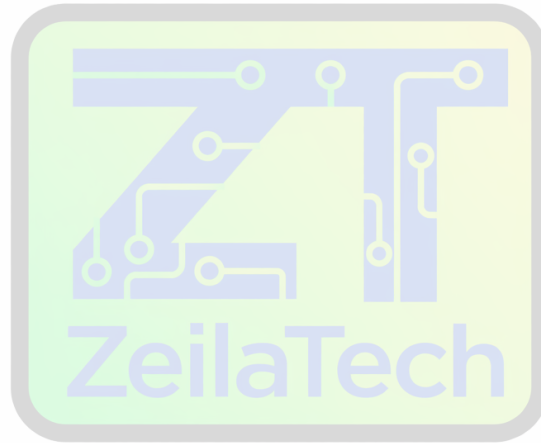
The final sketch should be translated into the project by using appropriate tools, materials and techniques as follows:

- (i) Tools/equipment: e.g. rolling pin board, guide sticks, cutting wire, knife, sponge/foam, modelling tools, etc.
- (ii) Materials: e.g. clay, clay bodies, slip, colouring oxides, etc.
- (iii) Preparation of materials by wedging, kneading of clay and clay bodies.
- (iv) Constructing the frame by (slab work):
 - rolling clay into slabs;
 - allowing slabs to become leather-hard;
 - measuring and cutting into size and shape;

- scoring, joining cut out shape to form frame;
- decorating and finishing by embossing, sprigging, texturing, burnishing, etc.

Performance

This question was most unpopular. Perhaps this is due to the lack of potter's wheels in schools and also the number of task involved. Most of the candidates had challenges with warpage, cracking, joining and surface decoration.



Smart Learning Tools

- Test tiles can be referred to as any shape of clay that is used to test glazes, slips, engobes, under glazes etc.
- They are small rectangular slabs or coil rings for testing clays and glazes.
- They are clay pieces used to determine the qualities of clays or glazes before the clays or glazes are used for production
- They are prepared to evaluate Shrinkage, porosity, density, colour, maturing temperature, fired colour of clays and glazes, glaze fit etc.

In question 1(b), candidates were expected to explain with three reasons the necessity of test tiles in ceramics. This part was not handled any differently from the “A”. The responses provided by a lot of candidates did not correlate with the demands of most questions.

The expected responses include;

- It enables the potter to determine the fired colour of glaze before applying to the ware.
- It enables the potter to identify faults that may be associated with a glaze and to find solutions to them.
- It enables the potter to know the behaviour of glaze materials at specific temperature before final composition of glaze
- It is a way of enhancing creativity through glaze composition to obtain interesting results.
- Enables the potter to know how a glaze will behave on a rough or smooth surface.

Question 2

(a) Explain planter as a ceramic object.

(b) In a tabular form, write about the following:

- (i) Four differences between planter and flower vase;**
- (ii) Two differences between teapot and coffee pot.**

Candidates were expected to explain planter as a ceramic object. Most candidates were able to explain what a ceramic planter was as expected as a large decorative container of various sizes and shapes for growing flower or ornamental plants.

The challenge with question 2 (b) was to put answers in a tabular form. Some common mistakes observed were that candidates wrote that *‘planters were bisque fired while flower vases were ghost fired.’* Others also wrote that *‘planters were hung on the wall while flower vases were placed on the floor.’*

The responses expected by candidates were:

Planter	Flower Vase
▪ Used for growing flowers, vegetables, etc.	▪ Used for holding artificial and natural flowers.
▪ Has small hole at the base	▪ Has no hole at the base.
▪ Has saucer for the base/planter stands in a saucer.	▪ Has no saucer/does not stand in a saucer
▪ Has a wider rim and a short neck	▪ Has narrow neck and smaller rim
▪ Filled with soil/humus for planting	▪ Filled with water to support natural flower
▪ It has heavier object	▪ It is lighter object

On the difference between a teapot and a coffee pot, most candidates could not tell the difference except that a teapot is used to serve tea and a coffee pot for coffee.

Some candidates wrote that teapots did not have handles while coffee pots had handles. Others also stated that teapots have spouts while coffee pots have no spouts.

The responses expected by candidates were:

Tea pot	Coffee pot
• It is circular in shape	It is cylindrical in shape.
• It is shorter	It is taller in height.
• It has a wider rim.	Has a narrow/smaller rim
• Has a strainer	Has no strainer
• For serving tea	For brewing and serving coffee
• Has small handle for precise pouring	Big handle for comfortable grip and pouring

Question 3

Describe the following processes in Ceramics:

- (a) **Warping;**
- (b) **Shivering;**
- (c) **Sprigging;**
- (d) **Preheating;**
- (e) **Firing.**

Question 3 was the least-answered question. The few candidates who attempted this question did not perform well. Most candidates could only describe preheating and firing but most struggled with shivering and sprigging.

Shivering was misconstrued with sieving and crazing. Some candidates wrote shivering as the network of cracks on a glost fired ware but that describes crazing instead. Others deviated totally.

The expected responses include;

a) Warping:

It is a drying or firing defect where part of a ware bend or get distorted.

Causes:

- Lack of uniformity in clay body due to poor wedging.
- Poor kneading.
- Uneven drying of ware.
- Uneven thickness of wall, etc.

Prevention:

- Wedge clay properly.
- Knead clay into homogeneous state.
- Make wall of object even.
- Dry object slowly in a shade.
- Good packing.
- Control firing.
- Add grog to control plasticity.

b) Shivering:

- Glaze defect that occurs when glaze flakes or breaks away from the rim or edges of a pot.
- It is the mismatch of thermal expansion between body and glaze.
- It is the peeling or lifting away of glaze at the rim and edges of a pot.

Causes;

- Poor composition of glaze.
- Improper adjustment of glaze or the body resulting in stress and therefore the cracks.
- Glaze contraction at a slower rate than the body during cooling.

Preventions:

- Proper composition of glaze.
- Contracting rate of glaze and body should be the same.
- Proper adjustment of glaze to fit the body.

c) Sprigging:

- It is a relief decoration made by attaching a press mould design unto the surface of a ware.
- It is a decorative technique in ceramics.
- The process of sprigging is done at the leather hand state
- The moisture content of the design and ware must be the same.
- Both clays must be of the same body to avoid cracking of the design on the ware.
- They must be scored and slip applied before attachment to the ware.

d) Pre-heating

- It is the first stage of firing at a low temperature to prevent cracking of wares.
- Initial slow but rises in temperature from 0°C to 200°C.
- Also describe as water-smoking
- Physical water remaining in the ware evaporate in the form of vapour.
- It is done to prevent cracking of wares in the kiln.
- Prepare wares to overcome cracking and evaporation due to fast heating.
- It is the last stage of drying of clay in the kiln.

(e) Firing

- It is the application of heat to clay object to render it hard and permanent
- Firing of clay object may be done in an enclosed space in the kiln or in the open referred to as traditional open firing.
- The two types of firing are bisque firing and ghost firing
- Firing begins from a low temperature 0 C to about 200 C known as pre-heating.
- Clay matures at relatively high temperature, 900 C-1250 for earthen ware clays.
- Firing changes, the state of clay from soft and plastic to rock-like and non-plastic.

Question 4

(a) Why is traditional firing described as “open”?

(b) Describe the open-firing process.

Question 4 was the most popular question. The general performance with this question was good. The points were sequential and logical with some candidates illustrating their points.

The responses provided by candidates for question 4 (a) is similar to the expected answer below:

Firing is done in an open space on the ground, not in an enclosed kiln, with the ware exposed to the naked flames.

In the sub-question (b) the candidates were required to describe the open-firing process. This posed a challenge to some of the candidates. The following observations were made:

- Some of the candidates did not indicate the tools and materials required in carrying-out the process of open firing;
- A few mixed up the steps involved.

The candidates were required to follow these processes when firing:

Materials required include: dry wood, twigs or thin strips of wood, straw etc.

Processes:

- Dig a shallow saucer-like pit on the ground.
- Line the pit with twigs or dry leaves.
- Pack wares carefully in a conical manner in the pit.
- Pack large pots first followed by smaller ones in-between them.
- Spread twigs and dry leaves lightly between the wares after each layer of pots.
- After packing twigs, arrange a good quantity of firewood on the heap starting with thinner wood.
- Spread some damp leaves or grass on top.
- Cover it with thin layer of earth or shards, leaving a small vent at the top to ensure even penetration of heat to all the wares.
- Set fire to it on the side from where the wind blows.
- Allow wares to burn completely.
- Unpack wares after cooling.

Question 5

(a) Explain appendages.

(b) List three examples of appendages.

(c) State three reasons why appendages are important on containers.

For question 5 (a) Candidates put up an above-average performance with this question. Most candidates were able to explain what an appendage was. However, a few forgot to add that appendages are added in the leather hard state.

The expected answer for question 5 (a) include the following:

- Appendages are section or parts of a pot that is added to the main pot especially when leather hard to make it complete and functional.
- They are appendages because they are added to the container or the pot to make it complete. That is, they are made separately and when leather hard are fixed to the container.

Also, with question 5 (b) candidates were required to list examples of appendages such as; Handles, Knobs, Spouts. Most candidates mentioned the lid which is not considered an appendage and is not attached to the main body of the ware. These were marked wrong.

Question 5(c) demanded for the reasons why appendages are important in containers, some candidates wrote that appendages give stability to a container.

This is about foot of containers. The foot of a container is not an appendage; thus, such responses were also marked wrong.

The expected responses include:

- The spouts are a projection on the ware to assist pouring of liquids.
- The handle helps or assists lifting and carrying the pot.
- The knob helps in easy lifting or opening of the lids.
- They add value to wares.
- To make wares complete and functional.

Smart Learning Tools

Question 6

(a) Define saggar.

(b) Write on three advantages and two disadvantages of saggar.

(c) Illustrate a pile or bung of saggar.

Most candidates who attempted this question 6 performed well. They were able to define a saggar and stated three advantages of saggars. However, some candidates repeated the same advantages as disadvantages.

The expected responses were:

- A saggar is a protective box made of fire clay which holds the wares in the firewood, gas, oil and coal kilns during firing.

Advantages

- It protects the wares from direct contact with flames and hot gases from the fire.
- It supports the pots, making it possible to fill the kiln to any height.
- It makes the use of bats in the kiln unnecessary, etc.
- It protects small and delicate wares during firing.

Disadvantages

- It has a very short life span and may be used for only between 25 to 30 firings.
- It is relatively expensive to use.
- It consumes or waste a lot of fuel.
- It takes a great deal of space in the kiln.

The major challenge was part (c); the candidates' inability to illustrate a pile of saggars was brought to bear. Some drew a sign box as saggar and others drew bats.

Below are samples of saggars that the candidates were required to draw:

