

**THE MASTER'S VESSEL CLASSICAL ACADEMY
(SECONDARY SECTION)
P.M.B 7294, UMUAHIA, ABIA STATE.
THIRD TERM PROMOTION EXAMINATION MARKING SCHEME**

SUBJECT: BASIC TECHNOLOGY

CLASS: JSS1

SECTION A (30 MARKS)

Answer all questions in this section

1. The application of scientific knowledge aimed at production is
(a) **technology** (b) information (c) studying (d) experiment
2. An example of a modern age technology is....
(a) **computer** (b) candle (c) use of firewood for cooking (d) clay pot
3. Technological literacy does all except,
(a) **it makes people ignorant** (b) saves energy (c) encourages women participation in technology (d) improves standard of living
4. One of the following is not a safety device....
(a) **Mathematical** set (b) stabilizer (c) lab coat (d) fuse
5. Ceramic products can be made from
(a) **Clay and baked in a klin** (b) wood and baked in a frying pan (c) indomie and cooked in a pot (d) bread and baked in an oven
6. An example of a ferrous metal and a nonferrous metal is **respectively**....
(a) copper and iron (b) **iron and copper** (c) copper and steel (d) iron and steel
7. Metals are good conductors of heat and.....
(a) water (b) **electricity** (c) information (d) sound
8. One of these is not a property of ceramic materials....
(a) ability to withstand heat or chemical attack (b) **ability to conduct electricity** (c) brittle (d) anti oxidation
9. The drawing instrument which can be used to transfer measurement is/are the...
(a) protractor (b) **pair of dividers** (c) outside calipers (d) odd-leg calipers
10. The best instrument that can be used to make a horizontal line on a piece of drawing paper is the...
(a) setsquare (b) **tee square** (c) pair of dividers (d) pair of compasses
11. Which of the following scales represents a Full Scale drawing...?
(a) 1:100 (b) 1:10 (c) **1:1** (d) 1:1000
12. When a circle is divided into two equal parts, a will be formed?
(a) sphere (b) circle (c) **semicircle** (d) square
13. The measuring tool which can be used to measure the outside diameter of an object is...
(a) outside ruler (b) inside calipers (c) **outside calipers** (d) measuring tape
14. The best safety device used for a welding job is...
(a) A pair of transparent goggles (b) a pair of dark goggles (c) **a pair of dark goggles** (d) a pair of spectacles

15. The major difference in use between a mallet and a regular hammer is...
- (a) mallets are used for rigid work (b) hammers are used where a delicate work is required (c) **mallets are used where a delicate work is required** (d) there is no difference between a mallet and a hammer
16. Which of the following is an electrical insulator....?
- (a) Copper wire (b) gold coin (c) a piece of metal (d) **plastic cup**
17. The properties of glass include the following, except...
- (a) Brittle (b) hard (c) some are transparent (d) **good electrical conductors**
18. The best way to take care of a drawing paper is to...
- (a) Put it in your pocket (b) use it as a mat (c) bend it (d) **fold it into a long cone**
19. The odd pair of items on the list is...
- (a) Hammer, mallet and screwdriver (b) bradawl, scribe and ratchet brace (c) saw, cutter and file (d) **pliers, hammer and ruler**
20. Which of the following is a part of a typical claw hammer...?
- (a) Gullet (b) teeth (c) leg (d) **claw**
21. The rate of doing work is known as....
- (a) **power** (b) capacity (c) ability (d) energy
22. Force is given as a product of...
- (a) mass times energy (b) **mass times acceleration** (c) power divided by time (d) work divided by time
23. The functions of a semiconductor transistor include the following except...
- (a) amplification (b) rectification (c) **storing electrical charge** (d) switching
24. ...is the horizontal display of a proposed building project looking down from above?
- (a) elevation (b) bungalow (c) section (d) **plan**
25. Favor repaired his bicycle. What type of maintenance is this?
- (a) **Corrective maintenance** (b) predictive maintenance (c) long-term maintenance (d) preventive maintenance
26. The function of a capacitor is to
- (a) limit the quantity of current passing through a circuit component (b) **store electrical charges** (c) amplify sound (d) none of the options is true
27. Which of the following devices can produce electric current...?
- (a) mallet (b) diode (c) **battery** (d) capacitor
28. In a circuit, $R_1 = 1 \text{ Ohms}$, $R_2 = 2 \text{ Ohms}$ and $R_3 = 12 \text{ Ohms}$. The total resistance is given as...
- (a) 1212 Ohms (b) 15 (c) 20 Ohms (d) **15 Ohms**
29. Which of the following is an ancient building....?
- (a) **Mud house hut** (b) skyscraper (c) a 5 storey building (d) glass house
30. Which of the following is not usually found in a kitchen...
- (a) sink (b) **bath** (c) fireplace (d) cupboard

SECTION B

ANSWER ONLY 3 QUESTIONS. (30 MARKS)

1. Do these: (5 marks)

- i. Draw a claw hammer and represent the following parts: the handle, the claw and the striking face.



- ii. Give two examples how you may take care of a plastic ruler (1 mark)

To take care of a plastic ruler:

- Do not bend it
- Do not expose to harsh environmental condition like rain, excess heat, dust etc.
- Take care not to scrape off the graduation lines

- iii. What is the function of a capacitor? (2 marks)

A capacitor is an electrical device used for storing electric energy or charge to be used in other circuit or circuit components.

- iv. What do you understand by maintenance? (2 marks)

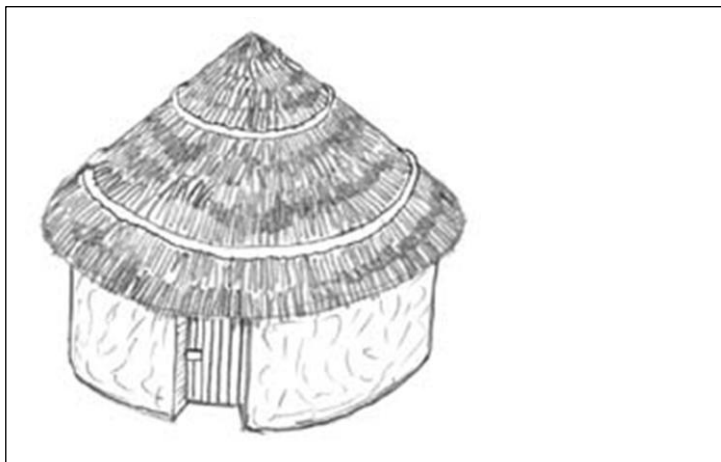
Maintenance is the activities required or undertaken to conserve or preserve as nearly or as long as possible the original condition of something while compensating for normal wear and tear.

2. Do the following:

- i. What is a building? (1 mark)

A building is a structure which has walls, roofs and, such as a factory.

- ii. Draw a simple hut and explain its features. (4 marks)



A hut is a small unit of ancient building design made using mud, usually round in shape, roofed using thatches.

iii. What is a blueprint? (1 mark)

A blueprint is a 2-dimensional architectural design drawing that indicates the size of a planned building, the materials to be used in its construction and the placement of its features.

iv. Mention two types of buildings you know. (1 mark)

Types of building include, hut, bungalow, duplex, detached building, semi-detached building, high-rise building, skyscraper etc.

v. Write and explain three importance of buildings to man. (3 marks)

- **Building offer protection against harsh weather like: sun, rain, heat, cold and fierce wind.**
- **Building provide a safe place where we can lodge or keep our valuables or property**
- **They provide a medium or place where official engagements can be carried out**
- **They provide a medium for residential, commercial and industrial activities.**

3. Do the following:

i. Define:

a. **Ceramics (1 mark)**

Ceramics is a piece of substance usually made from clay heated into solidification, hard and brittle.

b. **Boring tools (1 mark)**

Boring tools are tools which are used to make holes of openings into surfaces or bodies.

c. **Maintenance (1 mark)**

Maintenance is the activities required or undertaken to conserve or preserve as nearly or as long as possible the original condition of something while compensating for normal wear and tear.

ii. Mention two examples of devices used as safety devices (2 mark)

Helmet: this is a safety device that is worn to protect the head

Goggle: these are worn to protect the eye against particles released during work, for transparent goggles; dark goggles are specifically used to protect the eyes from bright light, e.g. welding light

iii. What is a resistor? (2 marks)

A resistor is an electrical safety device which is used to limit the amount of electrical current that passes through a conductor, or, it is a substance that opposes the flow of electric current.

- iv. What is the function of foundation in a building? **(3 marks)**
The foundation of a building is the part of a building below the ground that supports and firmly anchors the building and also distributes its weight

4. Calculations: **(6 marks)**

- i. Lionel Messi kicks a ball from the 18 meters spot to score a penalty that tore the net apart. If the ball weighs 0.5kg and the ball took a second to hit the net, find the power.

SOLUTION

Distance = 18 meters

Mass = 0.5kg

Time = 1 second

Power = ?

Power = work/time

Power = (force x distance)/time

Converting weight to newton,

Power = (0.5kg x 10 x 18m)/1sec

Power = (5 x 18)/1

Power P = 90watts or 90Nm/s or 90J/s

- ii. An angry child threw a stone at a lizard that ate the corns he spread under the sun to dry. If the force exerted was 5 Newton, Find the work done if the stone hit the lizard mildly at the tail and through a distance of 2 meters. **(4 marks)**

SOLUTION

Force = 5N,

Work done = ?

Distance = 2m

Work done = force x distance

Work done = 5N x 2m = 10Nm