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# NATIONAL EXAMINATIONS COUNCIL

2023 BASIC EDUCATION CERTIFICATE EXAMINATION

**B8301 & B8302**  
**BASIC SCIENCE**  
**AND TECHNOLOGY**

**2 hours**

**I&II**

Please do not open this question booklet until you are told to do so.  
While waiting, read the following instructions carefully.

There are **two** papers of **sixty (60) multiple-choice** questions each. **Paper I** which is Basic Science and Physical and Health Education will last for **1 hour** after which the OMR Sheet will be collected. **Paper II** which is Basic Technology and Computer Studies will also last for **1 hour**.

## PAPER I BASIC SCIENCE & PHYSICAL AND HEALTH EDUCATION

**Time Allowed: 1 hour**

### INSTRUCTIONS TO CANDIDATES

1. Answer **all** questions,
2. Use **HB pencil** only.
3. Write your **Name** and **School Name** on the answer sheet provided. Also, write and shade appropriately your **Registration Number** in the spaces provided.
4. Answer each question by shading the box that corresponds to the option you have chosen.
5. Do **not** waste time on any question. If you find any difficult, go to the others and finish them before you come back to the difficult one(s).
6. There must **not** be more than one shading for an answer. Any answer with shading of more than one box will be marked wrong.
7. If you change your mind about an answer, completely erase the first shading.
8. Do **not** start until the Supervisor tells you to do so.

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**Turn Over.**

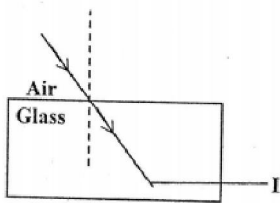
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**BASIC SCIENCE & PHYSICAL AND HEALTH EDUCATION**  
**Time Allowed: 1 hour**

**PAPER I**  
**BASIC SCIENCE**

1. Human solid and liquid wastes from homes is known as
  - A. effluent.
  - B. garbage.
  - C. refuse.
  - D. sewage.
  - E. sullage.
  
2. A masked trait is said to be
  - A. allelic.
  - B. dominant.
  - C. genotypic.
  - D. phenotypic.
  - E. recessive.
  
3. The following are reasons for skill acquisition **except** for
  - A. fun making.
  - B. managing emergencies.
  - C. self employment.
  - D. survival strategy.
  - E. taking risks.
  
4. The incubation period in birds is between
  - A. fertilization and hatching of eggs.
  - B. fertilization and laying of eggs.
  - C. hatching of the first egg and the last egg.
  - D. laying and hatching of eggs.
  - E. laying of the first egg and hatching.
  
5. Which of the following is an example of waterborne disease?
  - A. Cold
  - B. Measles
  - C. Pneumonia
  - D. Tuberculosis
  - E. Typhoid
  
6. A product of tobacco is
  - A. cigarette.
  - B. cocaine.
  - C. heroin.
  - D. marijuana.
  - E. morphine.
  
7. The process by which food substances are broken down into simple and soluble form is called
  - A. defecation.
  - B. digestion.
  - C. excretion.
  - D. mastication.
  - E. regurgitation.

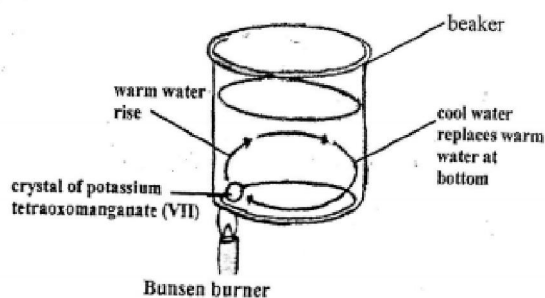
Study the diagram below and use it to answer questions 8 and 9.



8. The diagram illustrates
- A. diffused reflection.
  - B. laws of refraction.
  - C. refraction of light.
  - D. regular reflection.
  - E. scattered reflection.
9. The part labelled **I** is the
- A. incident ray.
  - B. reflected ray.
  - C. reflecting medium.
  - D. refracted ray.
  - E. refracting medium.
10. The distribution of materials within an organism is known as
- A. circulation.
  - B. digestion.
  - C. excretion.
  - D. reproduction.
  - E. respiration.
11. Which of the following is a flowering plant?
- A. Conifer
  - B. Fern
  - C. Ixora
  - D. Liverwort
  - E. Moss
12. The conversion of water vapour to liquid is known as
- A. condensation.
  - B. deposition.
  - C. evaporation.
  - D. sublimation.
  - E. vaporization.
13. A microphone converts sound energy into \_\_\_\_ energy.
- A. electrical
  - B. heat
  - C. magnetic
  - D. mechanical
  - E. light
14. Which of the following is the chemical formula of water?
- A. HO
  - B. H<sub>2</sub>O<sub>2</sub>
  - C. h<sub>2</sub>O
  - D. H<sub>3</sub>O
  - E. H<sub>3</sub>O<sub>2</sub>

15. Which of the following vitamins is also referred to as the “Sunshine vitamin”?
- A. A
  - B. B
  - C. D
  - D. E
  - E. K
16. In the solar system, the fourth planet from the sun is
- A. earth.
  - B. mars.
  - C. mercury.
  - D, neptune.
  - E. venus.
17. Which of the following is a renewable source of energy?
- A. Coal
  - B. Diesel
  - C. Petrol
  - D. Gasoline
  - E. Wood
18. Metals expand when \_\_\_\_\_ energy is applied to them.
- A. chemical
  - B. heat
  - C. kinetic
  - D. light
  - E. sound
19. Matter are classified into \_\_\_\_\_ states.
- A. two
  - B. three
  - C. four
  - D. five
  - E. six
20. The following are methods of controlling soil erosion except
- A. bush burning.
  - B. mulching.
  - C. planting of cover crops.
  - D. planting of trees.
  - E.. terracing.
21. The method of growing food crops and trees on the same piece of land is
- A. afforestation.
  - B. agroforestry.
  - C. crop rotation.
  - D. horticulture.
  - E. mixed cropping.
22. When two forces act on a body and it remains at rest, it means the forces acting \_\_\_\_\_ on it are
- A. equal and opposite.
  - B. inactive.
  - C. in constant motion.
  - D. unbalanced.
  - E. weak and active.

23. The method of heat transfer demonstrated in the diagram below is



- A. conduction.  
B. convection.  
C. evaporation.  
D. radiation.  
E. vaporization.
24. An engine pumps water of 50 kg through a vertical height of 4 m in 10s. Calculate the power of the pump in watts, [ $g = 10 \text{ ms}^{-2}$ ]  
A. 26  
B. 54  
C. 55  
D. 74  
E. 200
25. The energy possessed by a stationary ball is \_\_\_\_\_ energy.  
A. chemical  
B. electrical  
C. kinetic  
D. magnetic  
E. potential
26. Which of the following is not a radioactive element?  
A. Magnesium  
B. Plutonium  
C. Radium  
D. Thorium  
E. Uranium
28. When a bar magnet is suspended freely and it comes to rest, its ends point in the \_\_\_\_\_ direction.  
A. East-West  
B. North-South  
C. North-West  
D. South-East  
E. South-West

**Objective Questions 29 – 60 Removed in this Free Version**

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**BASIC SCIENCE AND PHYSICAL AND HEALTH EDUCATION  
PAPER I 2023**

1.D 7.B 13.A 19.B 25.E 31.A 37.C 43.A 49.A 55.C  
2.E 8.C 14.C 20.A 26.A 32.E 38.A 44.B 50.C 56.C  
3.A 9.D 15.C 21.B 27.D 33.E 39.A 45.E 51.B 57.D  
4.D 10A 16.B 22.A 28.B 34.E 40.D 46.E 52C 58.A  
5.E 11.C 17.E 23.B 29.A 35.C 41.D 47.C 53.B 59.D  
6.A 12.A 18.B 24.E 30.E 36.E 42.A 48.A 54.C 60.C