

BECE BOOSTER  
INTEGRATED SCIENCE  
Essay and Objective  
2 hours

2&1

Name: .....

Index number: .....

## DAS B.E.C.E PERFORMANCE BOOSTER

**BASIC EDUCATION CERTIFICATE MOCK**

### INTEGRATED SCIENCE

2 hours

[100 marks]

Write your **name** and **index number** in **ink** in the spaces provided above

This booklet consists of two papers. Paper 2 is in two sections: **A** and **B**. Answer all questions section **A** and four questions in section **B**.

Answer paper 2 on the question paper.

Paper 2 will last 1 hr. 15 minutes after which the drawing sheets will be collected

Answer paper 1 on your objective test answer sheet

Do not start paper 1 until you are told to do so. Paper 1 will last 45 minutes

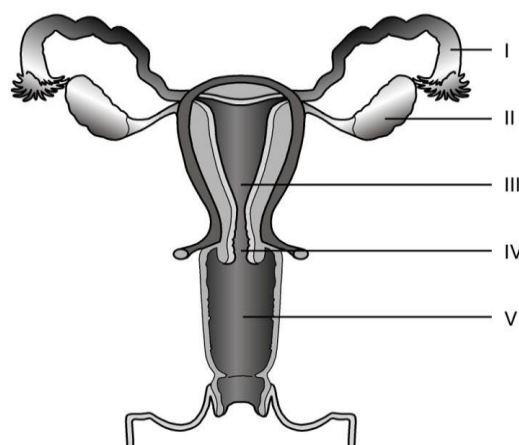
**PAPER 2 ESSAY 100 MARKS [1 HOUR 15 MINUTE]**

**PART 1**

**[TEST OF PRACTICAL] 40 MARKS**

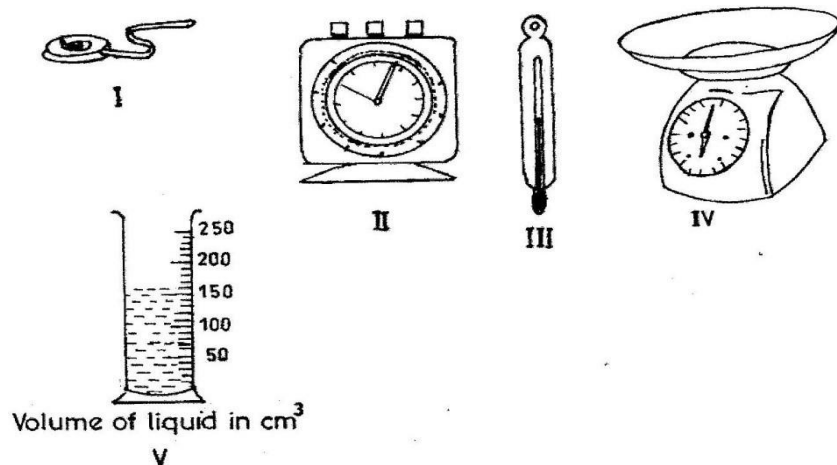
**Answer all questions in question 1**

1(a). The diagram represents a system. Study it and answer the questions on it.



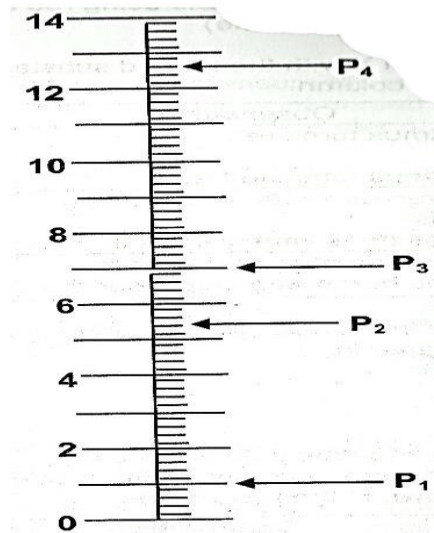
- i. What does the diagram represents and explain it 3 marks
- ii. Name the parts I to V 2 ½ marks
- iii. State the functions of I to V 2 ½ marks
- iv. Which part does fertilization takes place 1mark
- v. Which part does implantation of the embryo takes place 1mark

(b) The diagrams below show some instruments used in the laboratory. Study the diagrams carefully and answer the questions that follow



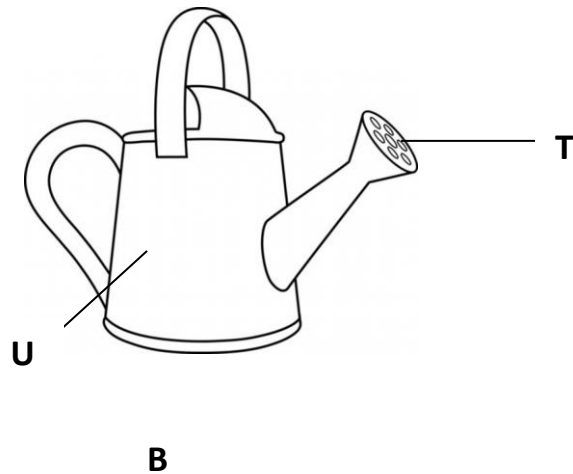
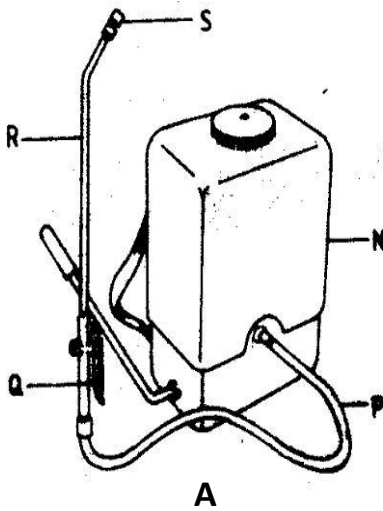
- i. Identify each of the instruments labeled I, II, III, IV and V 2 ½ marks
- ii. State one use of each of the instruments labeled I, II, III and IV 5 marks
- iii. Read and record the volume of the liquid in the instrument labeled V 2 ½ marks

(c) The graduated diagram below represents a pH scale. Answer the questions on it.



- i. Read and record each of the pH values; P1, P2, P3 and P4 2marks
- ii. What does pH; P1 and P2 indicate. Give one examples of such liquid 2marks
- iii. What does pH; P3 and P4 indicate. Give one example of such liquid 2marks
- iv. State the observations red litmus and blue litmus paper are dipped in turns into each of the liquid 4marks

d) The diagrams below represent farm tools. Study them and answer the questions.



- i. Write the names of the devices A and B 2marks
- ii. Label the parts N, P, Q, R, S, T and U 3 ½ marks
- iii. State one use each of the two devices 2marks
- iv. State the use of the parts labelled Q 1 ½ marks
- v. State one similarity between device A and B 1 marks

**PART 2 [60 MARKS]**  
**Answer four questions in this section**

- 2 (a) i. Define respiration 1marks
- ii) State two differences between the types of respiration 2marks
- (b) i Differentiate between potential energy and kinetic energy 2marks
- (ii) A body of mass 100kg moves with velocity of  $8ms^{-1}$ . Calculate its kinetic energy 2marks
- (c) (i) Explain the term electronic configuration 2marks
- (ii) State two differences between protons and electrons 2marks
- (d) State four importance of soil water 4marks
3. a (i) Explain the following
- α) ecosystem
- β) adaptation
- μ) habitat 3marks
- (i) State three adaptations of a fish in its habitat 3marks
- b. State four uses of the periscope 2marks
- c (i) Differentiate between hard water and soft water 2 marks
- (ii) State two advantages of hard water over soft water 2marks
- d (i) Explain the term fertilizer application 1 marks
- (ii) List four methods of fertilizer application 2 marks
4. a. State four importance of the carbon cycle 2marks
- b. Explain the following
- (i) soil structure
- (ii) soil texture
- (iii) soil porosity
- (iv) soil capillarity 5marks
- c. (i) Define a compound 1 mark
- (ii) State three differences between a compound and a mixture 3marks
- d. (i) Define frictional force 1mark
- (ii) State three applications of friction 3marks
5. a. (i) Differentiate between transpiration and photosynthesis 2marks

(ii) State three importance of photosynthesis	3marks
b. (i) Define a force	3mark
(ii) State three effects of a force	1½ marks
c. (i) List two causes of permanent hardness of water	1marks
(ii) State three ways of softening hard water	1½ marks
d. (i) Explain the term cultural practice	1mark
(ii) List four cultural practices in crop production	2marks
6 a. (i) Explain the following	
α) Biennial crops	
β) Perennial crops	2marks
(ii) List two examples each of biennial crops and perennial crops	2marks
(b) (i) What is the meaning of roughage?	2marks
(ii) State two benefits of roughage in our diet	3marks
c (i) Differentiate between pure science and applied science	2marks
(ii) State three methods of conducting scientific research	1 ½ marks
d (i) List the particulate nature of matter	1 ½ marks
(ii) Explain the reason why atoms are electrically neutral	2marks

**PAPER 1 [40 MARKS] 45 MINUTES**

1. Brass is an alloy of
  - A. iron and carbon
  - B. zinc and copper
  - C. iron and copper
  - D. copper and tin
2. An example of inorganic fertilizer is
  - A. ammonium nitrate
  - B. cow dung
  - C. farmyard manure
  - D. poultry dropping
3. The component of the human blood which transports oxygen to all parts of the body is
  - A. plasma
  - B. platelets
  - C. red blood cells
  - D. white blood cells
4. The importance of fuse in an electrical circuit is to
  - A. regulate the voltage
  - B. prevent damage to electrical appliances
  - C. alter the flow of current in the circuit
  - D. minimize the use of current
5. Which of the following step(s) is/are required in the scientific method?
  - I. Formulation of hypothesis
  - II. Identification of problem
  - III. Experimentation
  - A. I only
  - B. II only
  - C. II and III only
  - D. I, II and III
6. Which of the following food items produces amino acids as end-product of digestion?
  - A. cabbage
  - B. fish
  - C. margarine
  - D. rice
7. The process of increasing the strength of a signal using a transistor is known as
  - A. amplification
  - B. biasing
  - C. doping
  - D. switching
8. The physical arrangement of soil particles into aggregates is termed
  - A. soil porosity
  - B. soil profile
  - C. soil structure
  - D. soil texture
9. The solvent which is most effective in washing bitumen from the hand is
  - A. acid
  - B. alcohol
  - C. kerosene
  - D. water
10. A piece of stone could be classified as an opaque material because it
  - A. absorbs all the light incident on it
  - B. does not absorb light incident on it
  - C. allows all the light incident on it to pass through it
  - D. does not allow light incident on it to pass through it
11. Fish swims in water with little resistance because it possesses
  - A. gills
  - B. scales
  - C. caudal fins
  - D. streamlined body
12. Which of the following activities promote(s) rusting of iron?
  - I. Air
  - II. Moisture
  - III. Oil
  - A. I only
  - B. II only
  - C. I and II only
  - D. II and III only
13. The change in the volume of water when a piece of stone is dropped into it is equal to the
  - A. density of the stone
  - B. mass of the stone
  - C. volume of the stone
  - D. weight of the stone
14. The second stage in the life cycle of a mosquito is the
  - A. egg
  - B. imago
  - C. larva
  - D. pupa

15. Which of the following object can be attracted by a magnet?
- Copper chain
  - Gold chain
  - Steel chain
  - Aluminium spoon
16. The knowledge of soil texture is important because it
- influences plant population
  - determines the planting distance
  - determines the type of plant to be grown
  - influences the method of pest control
17. How many atoms are present in  $CaCl_2$ ?
- 2
  - 3
  - 4
  - 5
18. The transfer of heat from the bottom to the top of a beaker containing water is by
- absorption
  - conduction
  - convection
  - radiation
19. An example of chemical compound is
- aluminium
  - ammonium
  - oxygen
  - phosphorus
20. The type of human teeth used for biting food substance is
- canines
  - incisors
  - molars
  - premolars
21. An example of a third class lever is
- wheelbarrow
  - sugar tongs
  - pair of scissors
  - crowbar
22. The release of matured cells from an ovary into the fallopian tube in humans is called
- copulation
  - ejaculation
  - menstruation
  - ovulation
23. The blood vessels that carries oxygenated blood from the lungs to the heart is known as
- pulmonary artery
  - pulmonary vein
  - vena cava
  - aorta
24. An example of a plant micro-nutrient is
- calcium
  - copper
  - magnesium
  - potassium
25. What is the colour of the neutral wire in a three-pin plug?
- Blue
  - Brown
  - Green
  - Yellow
26. In the pin-hole camera, the image formed is always
- erect and bright
  - erect and blurred
  - inverted and real
  - inverted and virtual
27. The part of the flower that develops into the fruit is the
- ovary
  - ovule
  - stamen
  - style
28. The number element in the compound  $Ca(OH)_2$  is
- 2
  - 3
  - 4
  - 5
29. The reason why alum is added to water during treatment is to
- kill germs
  - give taste to water
  - make water colourless
  - make suspended particles to settle
30. Which of the following animal parasites could be controlled by hand picking?
- Liver fluke
  - Tapeworm
  - Tick
  - Roundworm

31. A stick which is partially immersed In water appears to be bent due to
- A. absorption
  - B. reflection
  - C. refraction
  - D. transmission
32. One difference between metals and non-metals is that metals
- A. have low density
  - B. are not malleable
  - C. have luster
  - D. have low melting points
33. The cultivation of different crops on different plots of farmlands in a definite cycle is called
- A. land rotation
  - B. shifting cultivation
  - C. crop rotation
  - D. mixed cropping
34. Iodine deficiency in humans could result in a disorder known as
- A. diabetes
  - B. goiter
  - C. kwashiorkor
  - D. scurvy
35. A substance is termed combustible if it
- A. easily catches fire
  - B. dissolves common salt
  - C. sublimates at room temperature
  - D. boils at 100°C
36. Micro-organisms that cause diseases are collectively called
- A. bacteria
  - B. infections
  - C. pathogens
  - D. viruses
37. Which type of energy is lost when sweat evaporates from the human body?
- A. sound energy
  - B. mechanical energy
  - C. chemical energy
  - D. heat energy
38. Which of the following gases is involved in the rusting of iron?
- A. Hydrogen
  - B. Oxygen
  - C. Nitrogen
  - D. Carbon dioxide
39. The feeling of soil between fingers is used to determine the
- A. texture of the soil
  - B. drainage of the soil
  - C. capillarity of the soil
  - D. water holding capacity of the soil
40. Sodium hydroxide is an example of a base because it
- A. has sour taste
  - B. has a pH less than 7
  - C. turns wet blue litmus paper red
  - D. turns wet red litmus paper blue**