**FREE VIRTUAL MOCK EXAMINATION (4)**
MAY 2020
**INTEGRATED SCIENCE**
**ESSAY and OBJECTIVE**
**2 HOURS**

**2&1**

**Name: ……..……..**

**Index Number……..……..**

# GB ASSESSMENT TEST (GBAT)

## FREE VIRTUAL MOCK EXAMINATION (4)

**May 2020** **INTEGRATED SCIENCE 2 &1** **2 hours**

*All answers must be provided on clean sheet of papers (Answer booklet).*
Write your name and index number on the sheets.

This examination consists of two papers. 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 hour 15 minutes and is in two parts; **I & II**. Answer all questions in part I and any other **four** questions in part II.

Answer all questions in your answer booklet.

Credit will be given for clarity of expression and orderly presentation of materials.

***DESIST FROM REFERING TO BOOKS BEFORE PROVIDING ANSWERS***

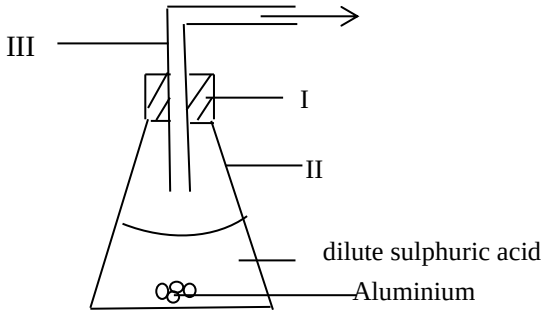
*#COVID-19. STAY HOME. STAY SAFE.*

**INTEGRATED SCIENCE 2**

This paper is in two parts; **I &II**. Answer all questions in part I and any other **four** questions in part II.

**PART I**

1. (a) The diagram below illustrates a set-up for preparing a gas in the laboratory. Study the set – up carefully and answer the questions that follow.



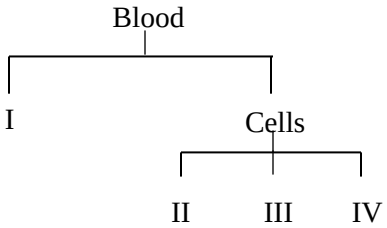

i. Name the parts labeled I, II, and III. [3 marks]

ii. Write a balanced chemical equation for the reaction. [4 marks]

iii. Name the gas evolved. [1 mark]

iv. List two metals which can react in similar way as the aluminium. [2 marks]

(b) The diagram below gives a summary of the main constituents of blood. Study it carefully and answer the questions that follow.




i. Identify the parts labeled I, II, III and IV. [4 marks]

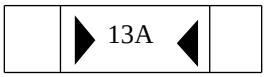
ii. Name any two substances transported by the part labeled I. [2 marks]

iii. State three functions of the blood. [3 marks]

iv. Which type of blood cell helps in blood clotting? [1 mark]

(c) The diagram below shows a device which is the weakest part in any electrical circuit. Study it carefully and answer the questions that follow.

A 


B 

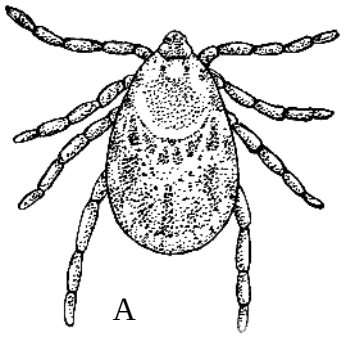

i. Which electronic device is illustrated above? [2 marks]

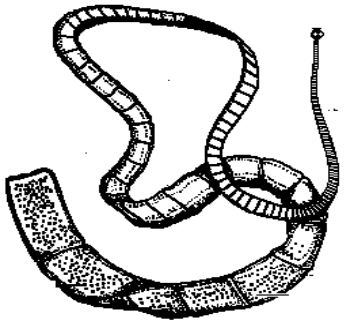
ii. In a three- pin plug, which wire houses the device above? [2 marks]

iii. If device B is in an electronic appliance, at which current will the device 'blow'? Explain [4 marks]

iv. Which of the two devices above has a low melting point? Why [2 marks]

(d) The illustrations below show some example of parasites.


A


B

i. Name the parasites labeled A and B. [2 marks]

ii. Mention four (4) other parasites that are harmful to humans [2 marks]

iii. Classify the parasites mention in (ii) above as either endoparasite or ectoparasite. [2 marks]

iv. Differentiate between a parasite and a pest. [2 marks]

v. Which of the parasites illustrated above (A & B) could also be described as a vector? Give a reason for your answer. [2 marks]

**PART II**

Answer only **four (4)** questions from this part

2. (a) i. What is weather forecasting?

ii. State **two (2)** importance of weather forecasting.

ii. Mention **two (2)** materials in making a simple wind vane. [3 marks]

(b) i. Explain why men should not accuse women of not delivering male children for them.

ii. State **two (2)** physical traits in humans [4 marks]

(c) i. What should you do to the pivot to reduce the amount of effort needed to lift something using a first-class lever?

ii. Mention **two (2)** examples of second-class lever. [4 marks]

(d) i. Give **two (2)** examples of alkali metals.

ii. State **two (2)** chemical properties of metals. [4 marks]

3. (a) i. What is a compound machine?

ii. Mention **four (4)** examples of compound machines. [3 marks]

(b) Explain the following methods of controlling pests and parasites [3 marks]

i. Cultural control

ii. Physical control

iii. Biological control

(c) i. What is a deficiency disease?

ii. State the deficiency disease caused by lack of the following food nutrients.

α Riboflavin

β. Retinol

$\gamma$. Niacin [4 marks]

(d) i. What is an insoluble solute?

ii. Mention **four (4)** insoluble solutes in water.

iii. State **two (2)** differences between mixtures and compounds. [5 marks]

4. (a) i. What are reactive metals?

ii. Explain why aluminium does not corrode. [3 marks]

(b) A student is drawing a bucket full of water from a well. It takes 5 seconds to lift the bucket, which weighs 150N through a vertical height of 4m.

i What type of energy does the water in the bucket gain as it is raised? Why?

ii. What type of energy does the student gain as he stands to draw the water? Why?

iii. Calculate the work done by the student.

iv. Calculate the power output of the student. [5 marks]

(c) i. What is meant by the term ***species***?

ii. Mention any **four (4)** types of habitat. [3 marks]

(d) Define the following terms

$\alpha$. Vaccination

$\beta$. Symptom

$\gamma$. Pathogen [4 marks]

5. (a) i. Define photosynthesis.

ii. Write a word equation and a balanced chemical equation for photosynthesis. [4 marks]

(b) i. State the ohm's law and represent it mathematically.

ii. In a circuit, a 9.0 volt battery is connected to two resistors each of resistance 3.0Ω. If the resistors are connected in parallel, calculate the current flowing in the circuit. [4 marks]

(c) Copy and complete the table below by filling in with the appropriate systematic name and chemical formula of the following compounds. [4 marks]

| Common name of compound | Systematic name | Chemical formula |
|---|---|---|
| Table salt | | |
| Sand | | |
| Carbon dioxide | | |
| Ferric oxide | | |

(d) i. What is global warming?

ii. State **four (4)** negative effects of global warming. [3 marks]

6. (a) i. Define the periodic table.

ii. State **two (2)** characteristics of the periodic table for the first twenty elements. [3 marks]

(b) i. Explain how carbon cycle helps to maintain a functioning ecosystem.

ii. Mention **two (2)** ways by which carbon cycle is disrupted. [4 marks]

(c) i. What is the difference between the vas deferens and urethra in the male reproductive system?

ii. State **two (2)** importance of placenta to the embryo. [4 marks]

(d) i. State the relationship between fluid pressure and depth.

ii. Give **two (2)** uses of pressure in fluids in everyday life. [4 marks]

***END OF ESSAY***

*Answer* **all** *the questions.*

*Each question is followed by* **four** *options lettered A to D. Find the correct option for each question and shade* **in pencil** *on your answer sheet the space which bears the same letter as the option you have* chosen. *Give only* **one** *answer to each question.*

1. How many valence electrons has sodium atom?
   A. 0
   B. 1
   C. 10
   D. 11

2. A pure substance formed from the chemical combination of two or more elements is known as
   A. molecule
   B. compound
   C. atom
   D. element

3. Plant stalk can be strengthened against fungal and bacteria attack by the addition of
   A. nitrogen
   B. manganese
   C. potassium
   D. iron

4. Metals react with acids to produce
   A. basic oxides
   B. salt and hydrogen gas
   C. an oxide and hydrogen gas
   D. water and hydrogen gas

5. An example of an alkali – earth metal is
   A. sodium
   B. magnesium
   C. aluminium
   D. phosphorus

6. The chemical symbol for Iron (III) oxide is
   A. FeO
   B. $Fe_3O_2$
   C. $Fe_3O$
   D. $Fe_2O_3$

7. Carbon is returned to the atmosphere through the following processes except.
   A. photosynthesis
   B. respiration
   C. burning
   D. decomposition

8. Regular changes in weather that repeat themselves every year is known as
   A. humidity
   B. weather
   C. season
   D. harmattan

9. In humans, the gestation period lasts
   A. 27 weeks
   B. 36 weeks
   C. 40 weeks
   D. 42 weeks

10. DNA stands for
    A. deoxyrinubolic acid
    B. deoxibonuclic acid
    C. deoxyribonucleic acid
    D. deoxinuboclic acid

11. Diffusion stops when the concentration gradient of the regions involve is
    A. high
    B. low
    C. the same
    D. increased

12. The alloy solder is mainly used for
    A. heating elements
    B. making currency coins
    C. joining electrical parts
    D. making balls

13. The back flow of blood from the right ventricle into the right atrium is prevented by the
    A. bicuspid valve
    B. tricuspid valve
    C. aorta

D. vena cava

14. The main function of lymphocytes is to
A. kill bacteria
B. regulate body temperature
C. produce antibodies
D. help clot blood

15. A green leaf is boiled for about 5 minutes to
A. decolourize the leaf
B. kill the living cells in the leaf
C. make the leaf soft
D. wash away alcohol from the leaf

16. An example of a water soluble vitamin is
A. retinol
B. calciferol
C. thiamine
D. phylloquinone

17. According to ohm's law which of the following mathematical equation is not true?
A. V = IR
B. $I = \frac{V}{R}$
C. V = RI
D. $I = \frac{R}{V}$

18. The positive lead of a transistor is called
A. base
B. collector
C. emitter
D. p – junction

19. Trypanosoma is caused by
A. Protista
B. bacteria
C. fungi
D. vector

20. The absorption of water and mineral salts from the soil through the roots of plants and transported to the leaves is the function of
A. xylem tissue
B. stem
C. root hairs
D. phloem tissue

21. Which of the following is a biological method of controlling pests and parasites?
A. Hand picking of pests
B. Disposing unwanted containers
C. Introducing guppies into ponds
D. Use of pesticides

22. The blood pressure of a patient is measured by an instrument known as
A. sphygonomamometer
B. manometer
C. barometer
D. blood meter

23. Which of the following is a third class lever?
A. Nut crackers
B. Pliers
C. Pencers
D. Forcep

24. Urethra is a passage way for
A. urine
B. sperm
C. semen
D. urine and semen

25. Dust is an example of
A. solid – solid mixture
B. solid – gas mixture
C. gas – gas mixture
D. solid – liquid mixture

26. The chemical symbol of Stannum is
A. St
B. Sn
C. Sa
D. Nm

27. The speed of wind is measured in
A. knots
B. millibars
C. millimeters
D. centimeters

28. What is the colour code of a neutral wire?
    A. Brown
    B. Blue
    C. Green
    D. Yellow

29. The valency of lead in lead (II) oxide is
    A. 1
    B. 2
    C. 3
    D. 4

30. Hardness of water can be caused by the following ions except
    A. $Mg^{2+}$
    B. $Ca^{2+}$
    C. $Fe^{2+}$
    D. $Cl^{-}$

31. Which force of attraction exists among the molecules of Kerosene?
    A. Intermolecular force
    B. Adhesive force
    C. Gravitational force
    D. Cohesive force

32. Calcium ions react with soap to form insoluble precipitate called
    A. scum
    B. scale
    C. foam
    D. carbonate

33. In the process of decantation, the insoluble particles that remains is called
    A. sediment
    B. filtrate
    C. distillate
    D. decantion

34. No menstruation occurs during pregnancy because there are high levels of
    A. oestrogen
    B. progesterone
    C. testosterone
    D. both estrogen and progesterone

35. The genetic make – up of an individual organism is termed
    A. phenotype
    B. genotype
    C. prototype
    D. behaviour

36. Photosynthesis takes place faster in
    A. red light
    B. white light
    C. blue light
    D. violet light

37. The number of atoms in the molecules of a compound depends on the
    A. valences of the elements
    B. atomic number of the elements
    C. bonding ability of the elements
    D. form of the element

38. The instrument used for measuring cloud base is
    A. ceilometer
    B. octal
    C. hygrometer
    D. hydrometer

39. When salt is put in a small area of soup, it dissolves and spreads through the whole soap through the process of
    A. osmosis
    B. diffusion
    C. sublimation
    D. melting

40. A possible deficiency of a child lacking ascorbic acid is
    A. rickets
    B. pellagra
    C. scurvy
    D. anaemia