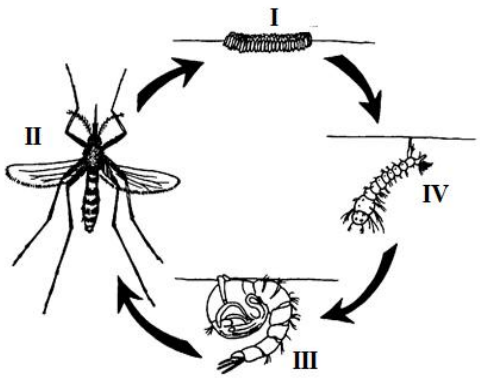
AGONA PORT D/A BASIC SCHOOL
END OF FIRST TERM EXAMINATION
INTEGRATED SCIENCE – J. H. S THREE (3)

This paper is in two parts: I and II. Answer Question 1 *in Part I and any other* ***four*** (4) *questions in Part II. Credit will be given for clarity of expression and orderly presentation of materials.*

PART I
[40 marks]
Answer all questions in this part.

1. a) The figure below is an illustration of the lifecycle of a female anopheles mosquito. *Study it carefully and use it to answer the questions that follow:*



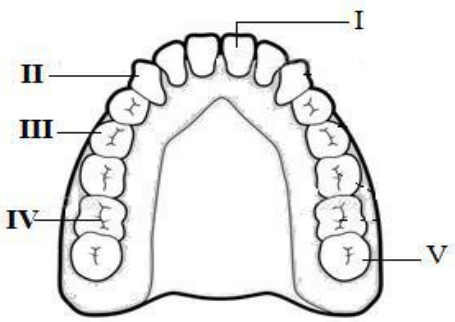
i) Identify the parts labeled I, II, III and IV.
ii) Describe how the part labeled IV obtains oxygen.
iii) Which of the developmental stages involves water?
iv) Name three (3) places where these developmental stages are likely to be found.
v) State two (2) ways of controlling adult mosquito population apart from the use of chemicals.
vi) Give two (2) reasons why mosquito population needs to be controlled.

(b) Figure 2 illustrates a bag of inorganic fertilizer. Use it to answer the questions that follow:

Figure 1

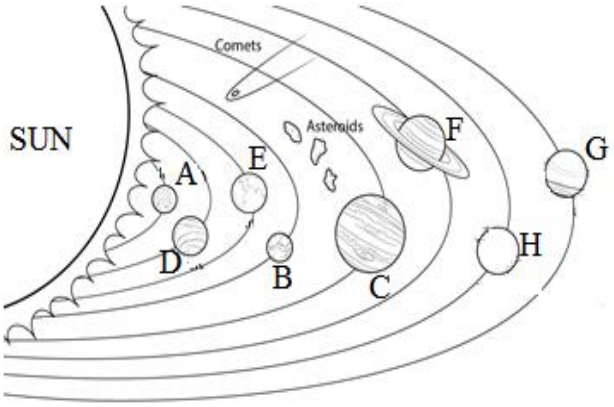
i) Name the type of inorganic fertilizer illustrated above.
ii) Give the names of the nutrients represented by the letters N, P and K on the illustration.
iii) What term is used to describe the label 15: 15: 15?
iv) List three (3) ways you can apply this fertilizer on your crops.
v) If the rate of application of NPK 15: 15 : 15 fertilizer is 7 bags per hectare, how many bags of fertilizer would be needed for a 30 hectare farm? Show working.

(c) The illustration below is the structure of the teeth in the lower jaw of humans. *Examine it carefully and use it to answer the questions that follow:*



i) Name the part of the human being where the structure is found.
ii) Identify the parts labeled I, II, III, IV and V.
iii) State the function of the parts labeled I, II and V.
iv) What is the name given to a collection of the parts labeled III and V?
v) State two structural differences between the parts labeled I and V.

(d) The diagram below represents heavenly bodies that move around the Sun. *Study the diagram carefully and answer the questions that follow:*



(i) Name the parts labeled A, B, C, D, E, F, G and H.

(ii) Which part (s) support plants and animal life?

(iii) List all the parts in increasing order of coldness in the solar system.

(iv) Explain why all the parts move around the Sun but they do not clash?

v) What is the general name for the diagram above?

PART II
[60 marks]

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

2. a) i) What is tooth decay?
   ii) Name three (3) ways of preventing tooth and gum diseases.

   b) i) Distinguish between a satellite and a star.
   ii) Outline any three (3) reasons why artificial satellites are launched into space.

   c) i) Name three (3) ways of controlling mosquito population under the environmental method.
   ii) Explain why the chemical method of controlling mosquito population is not environmentally friendly.

   d) i) What is a fertilizer?
   ii) Name three (3) factors that cause the depletion of soil resources.

3. a) i) What is neutralization reaction?
   ii) State two (2) importance of neutralization reaction.

   b) i) Distinguish between soil depletion and soil erosion.
   ii) Explain why water bodies should be desilted.

   c) i) Name two (2) ways of controlling mosquito population under the chemical method.

   ii) State one (1) structural difference between
   x) Canines and incisors teeth of human beings.
   y) Molars and premolars teeth of human beings.

   d) i) What is solar system?
   ii) Name three (3) conditions which make the Earth suitable for living by humans.

4. a) i) What is water conservation?
   ii) Name three (3) activities that destroy water bodies.

   b) i) Distinguish between an acid and a base.

ii) Name three (3) uses of sodium chloride.

c) i) What is a plaque?
ii) Explain why milk of magnesia is given to patient suffering from indigestion.

d) Soil erosion is a serious problem for some farmers.
i) Explain how soil erosion can affect the fertility of the soil.
ii) How does this affect the cost of production?

5. a) i) What is an alkali?
ii) Explain why it is painful when a bee stings you.
iii) How would you treat the sting in a(ii) above?

b) i) State three (3) differences between organic fertilizers and chemical fertilizers.
ii) Name the main plant nutrients.

c) i) What is compost?
ii) Name three (3) materials that are used in the preparation of compost.

d) i) Distinguish between a rocky planet and a gas giant.
ii) State three (3) differences between the Earth and the Sun.

6. a) i) What is mulching?
ii) Name three (3) importance of cover cropping.

b) i) Define an acid in terms of the production of ions.
ii) Name three (3) substances that are neither acidic nor basic.

c) i) What is dentition?
ii) List any three (3) mineral salts needed for strong and healthy tooth formation.

d) i) Name four (4) coldest planets.
ii) State one (1) reason which account for the coldness of the planets you have stated in ***d (i)*** above.

e) How can you prepare sodium chloride?

OBJECTIVE QUESTIONS – [40 marks]

Answer all questions in this part

1. A piece of rock which falls to the Earth is called….
   A. a meteorite
   B. a comet
   C. a satellite
   D. asteroid

2. Mosquito pupa breathes through a two-horn like tubes called……..
   A. lungs
   B. trachea
   C. siphon
   D. gills

3. The method of applying fertilizer by spreading it uniformly over the field is known as……..
   A. top dressing B. drilling
   C. fertigation D. broadcasting

4. One of the following is likely to have a pH of less than seven.
   A. lime juice B. wood ashes
   C. water D. caustic soda

5. Which acid accumulates in the stomach as a result of indigestion?
   A. hydrochloric acid
   B. sulphuric acid
   C. phosphoric acid
   D. nitric acid

6. Which of the following is not a possible consequence of soil erosion?
   A. silting up of water courses.
   B. loss of soil nutrients
   C. desertification
   D. reduced cost of production.

7. Nitrogen deficiency in the soil causes…….
   A. poor seed formation
   B. yellowing of leaves
   C. purple coloration
   D. fruits drop

8. The method of controlling mosquito population through weeding is…….
   A. chemical control
   B. biological control
   C. genetic control
   D. environmental control

9. At which stage in the mosquito's lifecycle does it transmit the malaria parasite?
   A. adult B. eggs
   C. larva D. pupa

10. The distance in the universe is measured in ……..
    A. meters B. light years
    C. kilometers D. centimeters

11. The planet Earth is located in a galaxy known as …
    A. constellation B. meteorites
    C. milky way D. satellite

12. Pinto always complains of toothache when he takes in very cold or hot food. Which of the following explains the cause?
    A. the nerves in the tooth are exposed.
    B. his tooth is about to fall out.
    C. his incisors are too sharp
    D. he has brushed his tooth too much.

13. Pinto likes biting pupils whenever he fights in class. Pinto is likely to use which kind of teeth?
    A. canines B. the crowns
    C. the incisors D. the molars

14. An aqueous solution of a substance extracted from a plant tastes bitter and has a pH of 8. The solution will therefore ……..
    A. turn blue litmus red
    B. turn red litmus blue
    C. give an effervescence with Na_2CO_3.
    D. will have no effect on methyl orange

15. Which of the following may be used to relieve indigestion?
    A. hydrochloric acid
    B. red palm oil
    C. calcium hydroxide
    D. magnesium hydroxide

16. Continuous cropping of farm lands without maintenance results in nutrients being……
    A. leached B. eroded
    C. depleted D. dissolved.

17. Excessive irrigation in the cultivation of crops results in……
    A. desertification B. loss of water
    C. leaching D. loss of air

18. The mosquito transmits malaria to humans. This means that the mosquito is the …….
A. parasite B. infection
C. vector D. vaccine

19. The act of using fish which eats mosquito larvae is one way to reduce the mosquito population by…….
A. genetic control
B. environmental control
C. chemical control
D. biological control

20. Which of the following space objects is a star?
A. Meteors B. Sun
C. Venus D. Earth

21. The fraction of the Earth's surface that faces the sun at any particular time is…….
A. $\frac{1}{4}$ B. $\frac{1}{3}$
C. $\frac{1}{2}$ D. $\frac{2}{3}$

22. One special feature that enables premolars and molars to perform their function is the presence of ……
A. large flat crown
B. more than one root
C. cusps
D. wisdom teeth

23. Bacteria in food particles can cause inflammation of the ……..
A. tooth decay B. cavities
C. plaque D. gum.

24. The reaction between milk of magnesia and stomach acid is an example of ……..
A. a physical change
B. neutralization
C. an indicator
D. evaporation

Use the information below to answer questions 25 to 27.

A solid 'P' reacted with a liquid 'Q' to form a salt and water only. A portion of liquid 'Q' turned blue litmus paper red. Solid 'P' ***dissolved*** *when a portion of it was placed in water and stirred.*

25. Solid 'P' can be said to be……..
A. an acid B. a base
C. an alkali D. a salt

26. Liquid 'Q' is …….
A. a base B. a solute
C. an alkali D. an acid.

27. When red litmus paper is placed in liquid 'Q', the colour of the paper will ……..
A. remain the same
B. change to blue
C. be more bright
D. change to purple

28. Soil erosion takes place when the……
A. soil is limed
B. land is ploughed
C. soil nutrients are lost
D. rainfall is heavy.

29. Pinto allowed the soil enough time to restore its fertility after harvesting his cassava crops. This is known as ……..
A. bush burning
B. Fallow period
C. continuous cropping
D. cover cropping

30. At which stage in the mosquito's lifecycle does it feed underwater?
A. adult B. egg
C. larva D. pupa

31. Covering the surface of a pool of water with oil to prevent malaria from breeding is an example of ….
A. genetic control
B. environmental control
C. chemical control
D. biological control

32. Which of the methods of controlling mosquito kills mosquito at every stage of its lifecycle?
A. chemical control
B. biological control
C. environmental control
D. genetic control

33. The force that holds satellites and planets in orbit is called…
A. force of gravity
B. Electrostatic force
C. magnetic force

D. tensional force

34. The complete movement of a planet round the sun is termed……
    A. rotation B. revolution
    C. resolution D. gravitation

Use the information below to answer questions 35 and 36.

figure a

35. Which kind of teeth is shown in **figure a** above?
    A. canine B. incisor
    C. molar D. premolar

36. What is the main function of the structure above in the mouth of human beings?
    A. for chewing
    B. for grinding
    C. for cutting
    D. for tearing

37. Which of the following is true about the cheek teeth?
    A. They are used for tearing flesh.
    B. They are conical and bluntly pointed
    C. They have cusps
    D. They are used for cutting and grinding

38. The reaction between milk of magnesia and the stomach acid is represented by the equation

$$2HCl + Mg(OH)_2 \rightarrow MgCl_2 + 2H_2O$$

    Which substance in the equation above is a salt?
    A. HCl
    B. $Mg(OH)_2$
    C. $MgCl_2$
    D. H_2O

39. In which part of the tooth are the blood vessels and nerves fibres?
    A. Dentine
    B. enamel
    C. cement
    D. pulp cavity

40. The male mosquito is different from the female in the following ways ***except***……
    A. it cannot feed on blood
    B. it cannot lay eggs
    C. its antennae are smooth
    D. it cannot transmit malaria