THIRD TERM EXAMINATION
INTEGRATED SCIENCE
Essay and Objective Test

2hours 10 minutes **2&1**

Name: _____

Index Number:_____

CENTER for QUALITY ASSESSMENT AND EXAMINATION

GHANA

END OF THIRD TERM EXAMINATION

BASIC 7 **INTEGRATED SCIENCE 2&1** 2 hours 10 minutes

Essay and Objective

Do **not** *open this booklet until you are told to do so. While you are waiting, read and observe the following instructions: Write your* **name** *and* **index number** *in* **ink** *in the spaces provided above.*

This booklet 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* **1** *hour* **25** *minutes after which the answer booklet will be collected. Do* **not** *start Paper* **1** *until you are told to do so. Paper* **1** *will last for* **45** *minutes.*

PAPER 2

ESSAY *(100mks)*

Answer **all** *questions in your answer booklet.*
This paper is in two sections; **A** *and* **B**. *Answer Questions* **1** *in Section A and any other* **three** *questions in Section* **B**.
Credit will be given for clarity of expression and orderly presentation of materials.

SECTION A *(40mks)*

Answer **all** *the questions in this section.*

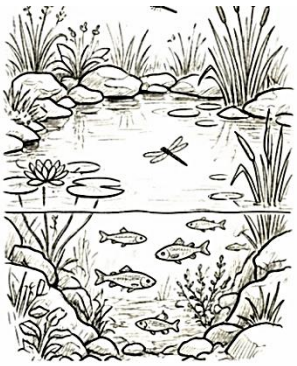
1. a. Study the diagrams below carefully and answer the questions that follow:



A



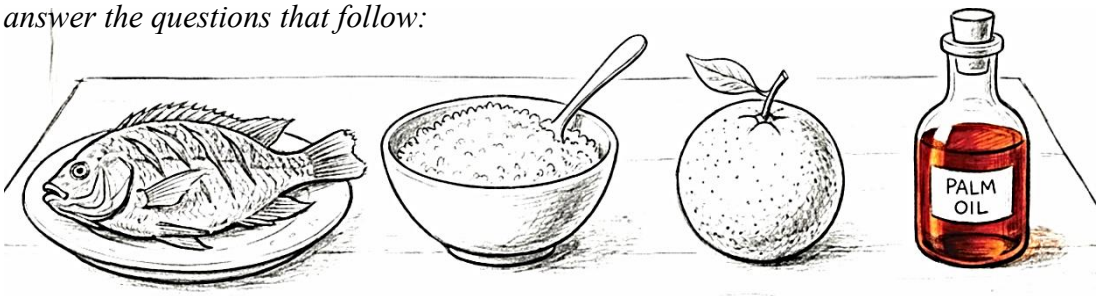
B



C

i. Identify the structures labelled as A, B and C. *(3mks)*
ii. State two waste management practices shown in the diagram. *(2mks)*
iii. Explain one importance of the compost pit. *(1mks)*
iv. Name two living components of the ecosystem shown. *(2mks)*
v. State two ways proper waste management helps to keep the environment clean. *(2mks)*

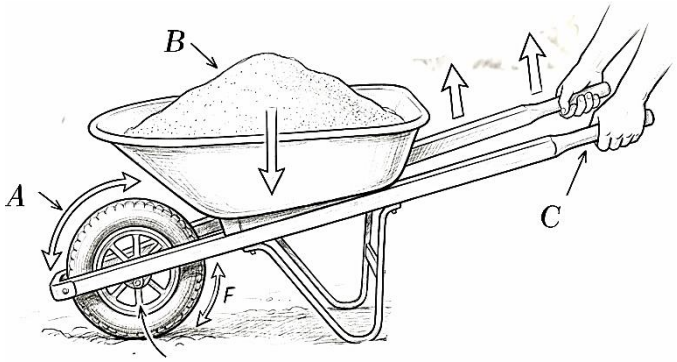
b. The diagram below shows different food items placed on a table. *Study them and use them to answer the questions that follow:*



fish rice orange palm oil

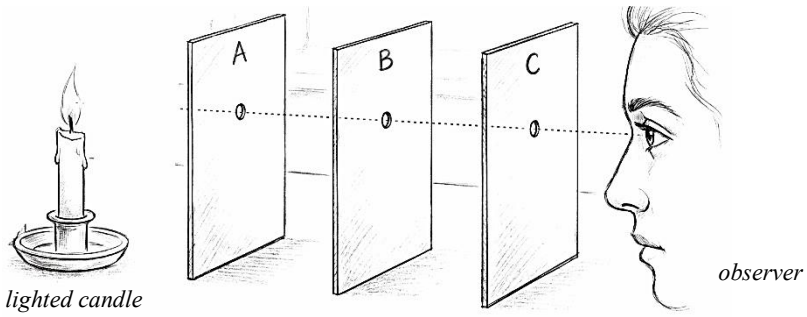
i. State the main nutrient supplied by: *(3mks)*
   α. Fish
   β. Rice
   γ. Orange
ii. Mention two functions of proteins in the human body. *(2mks)*
iii. State two functions of carbohydrates in the body. *(2mks)*
iv. Name one deficiency disease caused by lack of Vitamin C. *(1mks)*
v. State two effects of malnutrition on humans. *(2mks)*

c. The diagram below shows s wheel acting as fulcrum, the load in the tray and arrows indicating effort applied upward at the handles. *Use it to answer the questions that follow:*



i. Name the simple machine illustrated. *(1mks)*
ii. Identify the parts labelled: A, B and C. *(3mks)*
iii. State the class of lever represented by the wheelbarrow. *(2mks)*
iv. Explain one function of the wheelbarrow in everyday life. *(2mks)*
v. State two advantages of using simple machines when doing work. *(2mks)*

d. Figure 1 b. illustrates a lighted candle is placed in front of three cardboard screens. *Use the figure to answer the questions that follow:*



i. Name the source of light shown in the diagram. *(1mks)*
ii. State the observation made when the holes in screens A, B and C are aligned. *(2mks)*
iii. State the scientific principle demonstrated by the experiment. *(2mks)*
iv. Explain what will happen if screen B is moved slightly out of line. *(3mks)*
v. Mention two everyday situations that show that light travels in a straight line. *(2mks)*

Part II – 60marks

ESSAY TEST

*Answer any **three** questions from this section.*

2. a. During a farm visit, your class used hoes and cutlasses. After the work, you noticed plastic sachets and food waste on the farm. Later, a student ate food that was not covered and had stomach pains.
i. State two uses of a hoe in basic on-farm activities. *(2mks)*
ii. Give two operational rules for handling a cutlass safely. *(2mks)*

b. i. Identify two types of wastes seen on the farm. *(2mks)*
ii. Suggest three sustainable waste management practices to keep the farm clean. *(3mks)*

c. i. Name the bacterial disease the student is likely suffering from. *(1mks)*
ii. State two ways to prevent the disease. *(2mks)*

d. i. Explain how burning plastic waste on the farm contributes to climate change. *(2mks)*
ii. Give one green economy action to reduce this effect. *(1mks)*

3. a. i. State two things that happen to food in the stomach during digestion. *(2mks)*
ii. Name one enzyme involved in digestion in the mouth. *(1mks)*

b. i. Explain the term refraction of light. *(2mks)*
ii. Your teacher used a glass of water and a pencil to show how light bends. Describe one observation when the pencil was placed in the glass of water. *(3mks)*

c. i. State Newton's First Law of Motion. *(2mks)*
ii. Explain why it is important to were seat belt in a vehicle. *(2mks)*

d. i. Name two types of farming systems practiced in Ghana. *(2mks)*
ii. Give one advantage of mixed farming. *(1mks)*

4. a. i. List three different foods and state the main nutrient each contains. *(3mks)*
ii. Give one deficiency disease caused by lack of vitamin C. *(1mks)*

b. i. State two symptoms of malaria. *(2mks)*
ii. Mention two risk factors of communicable diseases. *(4mks)*

c. i. Explain two ways science and technology have improved homes in Ghana. *(2mks)*
ii. Give one negative impact of technology on society. *(1mks)*

d. Differentiate between heat and temperature. *(2mks)*

5. a. i. Mention two diseases caused by viruses. *(2mks)*
ii. Mention two measures that can be used to prevent the spread of such diseases. *(2mks)*

b. i. State two ways science and technology have improved life in Ghana. *(2mks)*
ii. Name two internationally known scientists. *(2mks)*

c. i. State two ways of conserving energy at home. *(2mks)*
ii. Explain two benefits of energy conservation to the environment. *(2mks)*

d. You are watching a bus travelling on a straight road. The driver suddenly brakes. The passengers inside the bus move forward.
i. Name the force that causes the bus to slow down. *(1mks)*
ii. Explain why the passengers move forward when the brake is pressed. *(2mks)*

END OF ESSAY TEST

Paper 1

Answer **all** *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 answer space which bears the same letter as the option you have chosen. Give only* **one** *answer to* **each** *question. An example is given below:*

Which of the following elements reacts with water?
A. Carbon
B. Sodium
C. Sulphur
D. Iodine

The correct answer is electronic *which is lettered* B *and therefore answer space* B *would be shaded.* [A] ■ [C] [D]

Think carefully before you shade the answer spaces; erase completely any answer you wish to change.

Do all rough work in the answer paper. Now answer the following questions.

1. An unbalanced force acting on an object causes a change in its _____.
A. chemical composition
B. colour of surface
C. physical appearance
D. state of motion

2. Inertia refers to the tendency of an object to resist _____.
A. colour changes
B. motion changes
C. shape changes
D. size changes

3. The characteristics of a fertile soil include good:
I. aeration
II. texture
III. water-holding capacity
A. I only
B. I and II only
C. II and III only
D. I, II and III

4. A machine with 80% efficiency loses part of its energy through _____.
A. air moisture
B. friction effects
C. soil particles
D. sunlight rays

5. Improper storage of farm tools often leads to _____.
A. fruit production
B. rust formation
C. seed germination
D. soil enrichment

6. The ends of a magnet are called _____.
A. attraction points
B. force centres
C. magnetic poles
D. metallic edges

7. A wheelbarrow is an example of a ____.
A. first-class lever
B. fixed pulley
C. second-class lever
D. third-class lever

8. The presence of plastic waste in gutters may cause _____.
A. crop increase
B. flooding problems
C. rainfall formation
D. soil fertility

9. Machine efficiency compares work output with _____.
A. work distance
B. work force
C. work input
D. work speed

10. A learner places a bar magnet under a sheet of paper and sprinkles iron filings on top. The iron filings arrange themselves because of _____.
A. air pressure
B. heat transfer
C. light energy
D. magnetic field

11. Kwashiorkor mainly results from lack of
A. body-building foods
B. energy-giving foods
C. mineral salts
D. protective foods

12. Coronavirus is a _____.
A. bacterial disease
B. fungal disease
C. nutritional disease
D. viral disease

13. A passenger leans forward when a moving bus stops suddenly due to ____.
A. body inertia
B. earth rotation
C. magnetic attraction
D. wind action

14. A pair of scissors performs better because it combines _____.
A. living tissues
B. magnetic fields
C. simple machines
D. solar cells

15. A child suffering from rickets may have a deficiency of _____.
A. vitamin A
B. vitamin B
C. vitamin C
D. vitamin D

16. The spread of Ebola can be reduced through _____.
A. crowded meetings
B. proper isolation
C. shared clothing
D. unsafe handling

17. Science careers improve society mainly through _____.
A. conflict creation
B. pollution increase
C. problem solving
D. resource wasting

18. A greenhouse effect becomes harmful when there is excessive _____.
A. cloud formation
B. heat trapping
C. rainfall activity
D. soil erosion

19. A complex machine is made from ____.
A. living organisms
B. magnetic materials
C. renewable fuels
D. simple machines

20. Desert plants survive because they possess _____.
A. magnetic properties
B. rapid movement
C. reflective surfaces
D. water conservation

21. Increasing force on an object increases acceleration according to _____.
A. Boyle's Law
B. Newton's First Law
C. Newton's Second Law
D. Ohm's Law

22. Renewable energy sources are preferred because they are _____.
A. extremely costly
B. highly polluting
C. naturally replaced
D. quickly exhausted

23. Kofi wears a seat belt during a journey to reduce the effects of _____.
A. air resistance
B. body inertia
C. magnetic force
D. sound energy

24. A farmer sharpens a cutlass regularly to improve its _____.
A. market value
B. physical length
C. storage capacity
D. working efficiency

25. A pupil disposes of plastic bottles in a recycling bin to promote _____.
A. air pollution
B. soil erosion
C. waste management
D. water pollution

26. Kojo eats beans regularly to prevent ___.
A. mineral deficiency
B. protein deficiency
C. vitamin deficiency
D. water deficiency

27. A family uses mosquito nets to reduce the spread of _____.
A. machine friction
B. magnetic forces
C. soil nutrients
D. viral infections

28. Akua chooses solar panels for her home because they provide _____.
A. chemical energy
B. clean energy
C. fossil energy
D. nuclear energy

29. A teacher uses a wheelbarrow to transport sand because it _____.
A. creates friction
B. increases weight
C. reduces effort
D. stores energy

30. Yaw observes mangrove plants near a coastal area. The plants survive due to__
A. machine systems
B. magnetic properties
C. special adaptations
D. viral resistance

31. A student pushes an empty trolley faster than a loaded one because the empty trolley has _____.
A. greater magnetism
B. higher density
C. less inertia
D. more friction

32. A mechanic lubricates moving machine parts to reduce _____.
A. air pressure
B. friction losses
C. magnetic forces
D. water content

33. A mechanic uses a longer spanner instead of a short one to loosen a tight bolt on a tractor because the long tool
A. completely eliminates the friction between metal threads.
B. creates a larger turning effect with the same effort force.
C. increases the total mass of the bolt being turned.
D. transforms the simple bolt into a second-class lever.

34. A household separates organic waste from plastics to improve _____.
A. food digestion
B. force application
C. heat transfer
D. waste disposal

35. A science student aspires to become an engineer to help improve _____.
A. climate change
B. human conditions
C. soil erosion
D. viral diseases

36. A cyclist pedals harder when climbing a hill because greater force produces ____.
A. greater acceleration
B. lower acceleration
C. magnetic attraction
D. thermal expansion

37. A community installs biogas systems to encourage _____.
A. fossil fuels
B. land pollution
C. sustainable energy
D. waste burning

38. A learner chooses public transport to reduce _____.
A. carbon emissions
B. food intake
C. soil nutrients
D. water supply

39. During an experiment, a pupil applies different forces to identical toy cars and records their motion. The investigation demonstrates _____.
A. force-acceleration relationship
B. heat-expansion relationship
C. light-reflection relationship
D. magnet-attraction relationship

40. To prevent the spread of coronavirus in your classroom, you should.
A. Close all windows
B. Cough without covering mouth
C. Share drinking cups
D. Wash hands with soap regularly

END OF PAPER