

# STEM EXAMINATIONS BOARD

## PRE-PRIMARY LEAVING EXAMINATION SET XIV, 2024 INTEGRATED SCIENCE

*Time Allowed: 2 hours 15 minutes*

Index No.	Random No.						Personal No.		

Candidate's Name: .....

Candidate's Signature: .....

District ID No: 

--	--	--	--

Read the following instructions carefully:

1. Do not write your school or district name anywhere on this paper.
2. This paper has two sections: A and B. Section A has 40 questions and Section B has 15 questions. The paper has 8 printed pages altogether.
3. Answer all questions. All answers to both Sections A and B must be written in the spaces provided.
4. All answers must be written using a blue or black ball point pen or ink. Any work written in pencil other than graphs and diagrams will not be marked.
5. Unnecessary changes in your work and handwriting that cannot easily be read may lead to loss of marks.
6. Do not fill anything in the table indicated: "For Examiners' Use Only" and boxes inside the question paper.

FOR EXAMINERS' USE ONLY		
Qn. No.	Marks	EXR'S NO.
1 - 10		
11 - 20		
21 - 30		
31 - 40		
41 - 43		
44 - 46		
47 - 49		
50 - 52		
53 - 55		
<b>TOTAL</b>		

## SECTION A : 40 MARKS

Questions 1 to 40 carry one mark each.

1. What happens to ice when its temperature increases to  $0^{\circ}\text{C}$ ?

.....

2. Why is salt added to Oral Rehydration Solution (ORS)?

.....

3. State the effect of pouring engine oil on the soil.

.....

4. Give any one reason why hydrochloric acid is important in the stomach.

.....

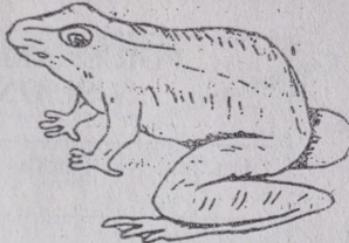
5. Why is fold pen system of keeping poultry not commonly practiced by farmers?

.....

6. How does opening of water channels control flooding in the environment?

.....

The diagram below shows an organism in the environment. Study and use it to answer questions 7 and 8.



7. How does the above organism breathe when in water?

.....

8. Why is the above organism able to live both on land and in water?

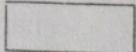
.....

9. State any one indicator of fever in the human body.

.....

10. Why is petroleum referred to as an exhaustible resource?

.....



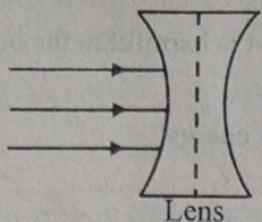
11. Give one reason why sacks of harvested cassava are placed off the floor during storage.

.....

12. How does religious affiliations affect the rate of food consumption in a community?

.....

The diagram below shows a lens. Study and use it to answer questions 13 and 14.



13. Complete the diagram above by showing how rays pass through the lens.

14. How does a lens enable the microscope to work?

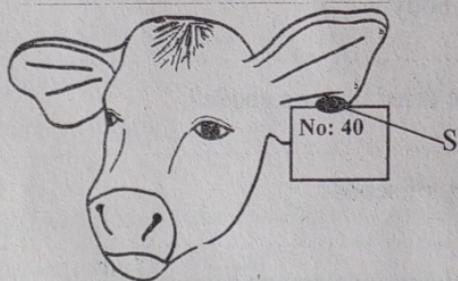
15. Why is the lid put on the squat hide of a convectional latrine?

16. Give any one way water is essential for plants in the environment.

17. State the benefit of dental flossing to the human body.

18. Why should vaccines be stored in refrigerated facilities?

The diagram below shows an animal's head. Study and use it to answer questions 19 and 20.



19. Name the structure marked S on the diagram above.

20. How is the above structure useful in animal husbandry?

21. Give the use of a switch to a cow grazing in the field.

22. Why should mothers participate in maternal and health care programs?

23. What is the difference between aerobic and anaerobic bacteria?

24. Why is the left side of the heart able to pump blood over a long distance?

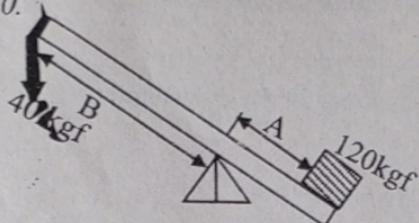
.....  
25. What do we call the use of drugs in the way that is harmful to the body?

.....  
26. How do crop farmers use animals as sources of energy?

.....  
27. Why do we usually hear buzzing sound in a hive?

.....  
28. What causes malnutrition among human beings?

The diagram below shows a simple machine. *Study and use it to answer questions 29 and 30.*



29. Which type of simple machine is shown in the diagram above?

.....  
30. State the benefit of increasing the distance marked B when using the above machine.

.....  
31. What causes hiccups in the human body?

.....  
32. Why should wood cut for timber be dried under a shade?

.....  
33. How does soaking increase viability of seeds?

.....  
34. Mention any one danger of sexual deviations among human beings.

.....  
35. State the importance of kindling nests in a rabbit hutch.

.....  
36. Give any one cause of poisoning in a home.

.....  
37. Which type of muscles enable the human arm to bend?

.....  
38. Name the part of the banana plant used for reproduction.

.....  
39. Apart from growth, state one other function of proteins in the human body.

40. What happens when the earth moves between the sun and the moon in a straight line?

### SECTION B: 60 MARKS

(Questions 41 to 55 carry four marks each.)

41. (a) Name the type of lifecycle tsetse flies undergo.

(b) Why do the eggs of tsetse flies hatch from the body?

(c) State any two ways of controlling tsetse flies in the environment.

(i).....

(ii).....

42. (a) Which pigment protects the human skin against ultra violet rays from the sun?

(b) Why is the human skin able to keep moist?

(c) Give any two ways the human skin regulates body temperatures.

(i).....

(ii).....

43. State the effects of the following farming practices to the soil.

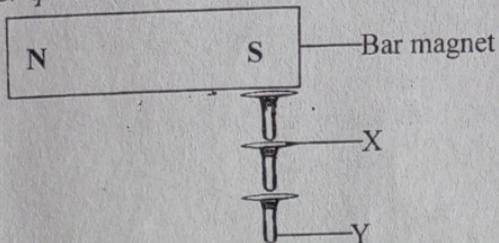
(i) Bush burning .....

(ii) Over cultivation .....

(iii) Leaching .....

(iv) Mono cropping .....

The diagram below shows a method of making temporary magnets. Study and use it to answer questions that follow.



44. (a) Which method of making magnets is shown in the diagram above?

(b) Name the poles of magnets marked;

(i) X .....

(ii) Y .....

(c) Why are the magnets made using the above method said to be temporary?

.....  
45. (a) Which type of germination is a characteristic of monocotyledonous plants?

.....  
(b) Give two roles of water during seed germination.

(i).....

(ii).....

(c) Why does the radical of a germinating seed grow faster than the plumule?

.....  
46. (a) What causes egg eating among birds?

.....  
(b) Apart from egg eating, give any two bad habits which develop among birds kept together.

(i).....

(ii).....

(c) Why are poultry farmers advised to put laying nests in dark corners?

.....  
47. (a) Which type of worms enter the human body through eating half cooked food?

.....  
(b) Apart from half cooked food, give any two ways worms enter the human body.

(i).....

(ii).....

(c) Why should babies be regularly dewormed?

.....  
48. (a) How does abstinence promote reproductive health among human beings?

.....  
(b) What is the danger of wearing very tight under wears to the human body?

.....  
(c) Give any two ways human beings care for their reproductive system.

(i).....

(ii).....

.....  
49. (a) How is static electricity produced in the environment?

.....  
(b) Name the natural form of static electricity in the environment.

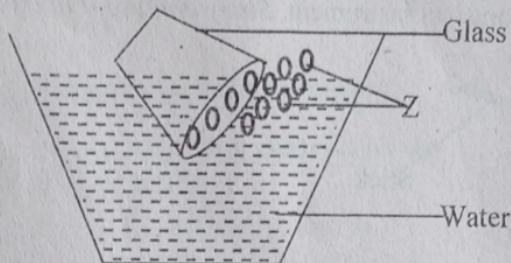
.....  
(c) Give any two ways of preventing dangers of lightening in the environment.

(i).....

(ii).....

50. (a) How does recycling metallic scraps conserve minerals in the environment?  
.....
- (b) Give any two reasons why minerals should be used sparingly.  
(i) .....  
(ii) .....
- (c) Why do human beings commonly use wood fuel for cooking rather than natural gas?  
.....
51. (a) Give any two signs of brain damage caused by excessive consumption of alcohol.  
(i) .....  
(ii) .....
- (b) Apart from brain damage, write down any two effects of alcohol to an individual.  
(i) .....  
(ii) .....

The diagram below shows property of air. *Study and use it to answer questions that follow.*



52. (a) Which property of air is illustrated in the diagram above?  
.....
- (b) What do the structures marked Z in diagram above represent?  
.....
- (c) Why is Pesticide able to splash with greater pressure when being sprayed?  
.....
- (d) Give any one other application of the property of air Similar to the one in C above.  
.....

53. (a) What is drenching?  
.....
- (b) Why do farmers carry out drenching?  
.....
- (c) What is the use of acaricides on a cattle farm?  
.....

- (d) State the benefit of regular replacement of acaricides in a dip tank.
- .....

The table below shows organisms in the environment. *Study and use it to answer the questions that follow.*

P	Q	R
Butterfly	Spider	Lobster
Termite	Ticks	crab

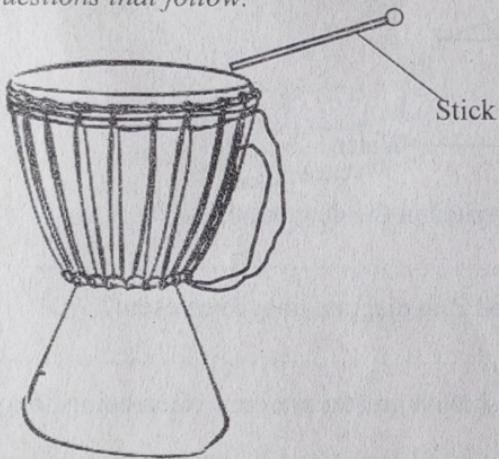
54. (a) Which general term is used to describe the above organisms?
- .....

- (b) Give any two similarities between organisms shown in the table above.

- (i) .....
- (ii) .....

- (c) How is a termite different from a spider in terms of breathing?
- .....

The diagram below shows a musical instrument. *Study and use it to answer the questions that follow.*

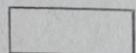


55. (a) Name the family of musical instruments to which the above instrument belongs.
- .....

- (b) What is the use of the stick when using the above instrument?
- .....

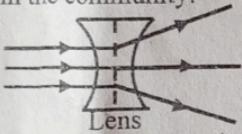
- (c) How does the above instrument produce sound when played?
- .....

- (d) State the benefit of displaying the above instrument in the sunshine before it is played.
- .....



END

**P.7 PRE-PLE SET XIV SCIENCE MARKING GUIDE, 2024**

<p>1. It melts.</p> <p>2. To add sodium to the body of the dehydrated victims.</p> <p>3. Engine oil kills soil living organs which help in decomposition of dead matter.</p> <p>4. Hydrochloric acid provides favourable acidic conditions for the proper working of pepsin and rennin to facilitate digestion of proteins to the stomach.</p> <p>5. It is tiresome /wastes time as the farmer keeps moving the pens /expensive to make pens /very few birds are kept.</p> <p>6. It allows easy and free movement of water.</p> <p>7. Through its moist skin.</p> <p>8. It has three breathing systems.</p> <p>9. High temperatures /sweating /shivering /convulsions.</p> <p>10. Petroleum cannot be replaced once used to meet human needs.</p> <p>11. It prevents rotting of cassava in the sack /prevent storage pests from destroying the sack and cassava.</p> <p>12. Religious food taboos reduce the rate of consumption in the community.</p> <p>13. </p> <p>14. The lens magnifies tiny substances and make them appear bigger.</p> <p>15. It prevents flies from entering the pit.</p> <p>16. Plants use water to make food /help in germination of seeds /softens the soil for easy establishment of roots.</p> <p>17. Dental flossing helps to remove food particles remaining in the teeth /prevents teeth diseases.</p> <p>18. Vaccines can easily be spoilt by heat /vaccines need to be kept under specific temperatures.</p> <p>19. Ear tag.</p> <p>20. It helps the farmer to identify an animal in case it gets lost.</p> <p>21. A switch chases away flies from the cow.</p> <p>22. It reduces infant mortality rate /reduces complications during labour.</p> <p>23. Aerobic bacteria reproduce in presence of oxygen unlike anaerobic bacteria.</p> <p>24. It is more muscular /made up of thicker muscles.</p> <p>25. Drug abuse.</p> <p>26. For ploughing the land /pulling carts full of produce /</p>	<p>animal droppings are used to produce biogas / as manure in crop gardens for transport.</p> <p>27. Due to regular flapping of wings /worker bees are flapping wings to regulate temperatures in the hive.</p> <p>28. Due to lack of essential food nutrients in the human body.</p> <p>29. Levers.</p> <p>30. It reduces effort needed to raise the load.</p> <p>31. Irregular movement of the diaphragm.</p> <p>32. To prevent them from bending.</p> <p>33. Soaking softens the seed testa and encourages easy establishment of the radicle.</p> <p>34. They lead to the spread of sexually transmitted diseases /increases hereditary diseases /cause oral thrush /unwanted pregnancies / imprisonment /forced marriages /school drop out.</p> <p>35. They protect newly born rabbits against harsh conditions /prevents newly born rabbits from being killed by other rabbits.</p> <p>36. Taking expired drugs /contaminated food / keeping drugs in bottles of soft drinks /keeping poisonous substances where children can reach.</p> <p>37. Voluntary muscle.</p> <p>38. Sucker.</p> <p>39. Proteins repair worn out body cells and tissues.</p> <p>40. Lunar eclipse /the sun casts the shadow of the earth on to the moon.</p> <p>41. (a) Complete lifecycle.          (b) Tsetse flies live in cold conditions which do not favour the hatching of eggs.          (c) Using tsetse fly traps /spraying using insecticides /clearing bushes around homes.</p> <p>42. (a) Melanin.          (b) The skin contains oil glands that produce sebum to keep it soft and moist.          (c) By sweating /vasoconstriction / vasodilation.</p>
---	---

43. (i) Bush burning — Kills soil living organisms.  
(ii) Over cultivation — Makes soil particles loose leading to soil erosion.  
(iii) Leaching — Washes nutrients to the deeper layers of the soil.  
(iv) Mono cropping — Leads to improper utilization of soil nutrients.
44. (a) Induction method.  
(b) (i) X — North pole.  
(ii) Y — South pole.  
(c) They can easily lose their magnetism.
45. (a) Hypogea germination.  
(b) It softens the seed testa /softens food for the growing embryo.  
(c) To provide anchorage to the growing embryo / absorb water and mineral salts for the growing embryo.
46. (a) Lack of enough calcium in their bodies /shortage of food /untimely collection of eggs /too much ventilation in a poultry house.  
(b) Cannibalism /feather pecking /toe pecking.  
(c) To prevent birds from eating their eggs.
47. (a) Tape worms.  
(b) Walking in dirty places with bare feet /eating un washed fruits and vegetables /eating raw food /drinking contaminated water.  
(c) To prevent worm infestation.
48. (a) It prevents contraction of sexually transmitted diseases /promotes proper growth of sexual organs.  
(b) Very tight under wears interferes with the movement and development of sexual organs.  
(c) Washing of sexual organs /shaving pubic hair / wearing loose under wears /abstain from sex / avoid sharing under wears /wearing clean and dry under wears.
49. (a) Rubbing of surfaces insulators.  
(b) Lightning.  
(c) Avoid taking shade under tall trees when it is raining /avoid walking bare footed when it is raining /installing lightning conductors on buildings.
50. (a) It reduces the rate of mining /metallic scraps can be used to make new objects thus reducing the use of the available minerals.  
(b) For future use /to prevent them from depletion /extinction.  
(c) Wood fuel is cheaper than natural gas.
51. (a) Progressive forgetfulness /loss of memory / madness /depression /anxiety /loss of appetite for food.  
(b) It leads to loss of appetite for food /causes kidney and liver diseases /self neglect / death /depression.
52. (a) Air occupies space /has volume.  
(b) Air escaping from the glass.  
(c) There is air exerting pressure in the container.  
(d) Drinking water using a straw /injecting medicine using a straw.
53. (a) Drenching is the giving /administering liquid medicine to animals to kill internal parasites.  
(b) To control internal parasites.  
(c) It is used to control external parasites.  
(d) It increases effectiveness of the acaricides /make acaricides more effective.
54. (a) Arthropods.  
(b) Both have jointed legs /segmented bodies /do not have backbones.  
(c) A termite breathes through spiracles while a spider breathes through lungs and tracheae.
55. (a) Percussion instruments.  
(b) It is used for hitting the above instrument.  
(c) By the vibration its skin membrane.  
(d) To make it produce high pitched sound.

END