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PLE 2018 Integrated Science with answers

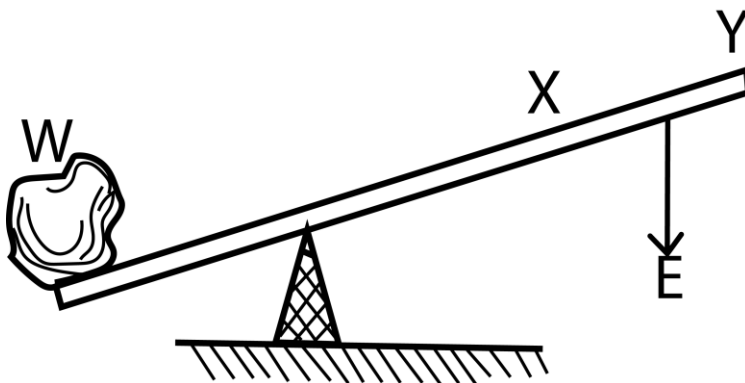
Marking guide

SECTION A: 40 MARKS

Question 1 to 40 carry one mark each.

1. State any one sign of a compound fracture.
Bones are seen out of the flesh, bleeding
2. What happens when a new queen is born in a hive?
New queen kills the old queen and other queen bees
Makes a mating flight
3. Which human body organ balances the amount of water needed in the body?
Kidney
4. Give anyone disorder of the human digestive system.
Diarrhea
Heartburn
Ulcers
Constipation

The diagram below is of a crow bar. Study and use it to answer questions 5 and 6



5. Which of the two positions X and Y requires less effort to overcome the load W?

Position Y

6. Indicate on the diagram with an arrow E, the direction of the effort used to overcome the Load W.

7. Why do houseflies lay their eggs in decaying matter?

Decaying matter contain food for maggots
Decaying matter is warm to make eggs hatch fast
Decaying matter is moist to prevent drying out of the eggs

8. Why is a fuse made of a thin wire?

To break easily in case of short circuit

9. Where are seeds of coniferous plants found?

In cones

10. How is the function of anthers in flowers similar to that of testes in humans?

Both the anther and testes produce male gametes

11. How do farmers control the breeding of poor quality animals on their farms?

- **Prevent poor quality animals from mating by castrating and sterilizing poor quality males**
- **Carry out cross breeding**

12. By what process is alcohol made from fruit juice?

Fermentation

13. Give one way in which school children can promote immunization in their Community?

School children can play a vital role in promoting immunization in their community through various initiatives and activities. Here are some effective ways:

- (i) **Educational Campaigns:** School children can participate in or organize educational campaigns to inform their peers, families, and community members about the importance of immunization. This can include posters, flyers, and presentations.

- (ii) **Peer Education:** Children can act as peer educators, sharing accurate information about vaccines and their benefits with classmates and friends, helping to dispel myths and misconceptions.
- (iii) **Community Outreach:** Organize or participate in community outreach programs, such as health fairs or vaccination drives, to raise awareness and encourage vaccination.
- (iv) **Social Media Advocacy:** Use social media platforms to spread positive messages about immunization, share personal stories, and provide information about where and when to get vaccinated.
- (v) **School Projects:** Create school projects or assignments focused on immunization and present findings to the school and community, highlighting the impact of vaccines on public health.
- (vi) **Engage Parents and Teachers:** Encourage discussions about immunization at parent-teacher meetings and involve teachers in spreading the message within the school.
- (vii) **Volunteer Work:** Volunteer at local health clinics or vaccination centers to assist with administrative tasks and support healthcare workers during vaccination drives.
- (viii) **Art and Creativity:** Use art, music, and drama to create engaging and informative content about immunization, making the message more relatable and memorable.

14. What First Aid would you give to a child who has taken paraffin?

- **Remove the Child from the Source:** Immediately take the child away from where the paraffin was ingested to prevent further exposure
- **Ensure the airway is open and put the patient in well-ventilated area**
- **Give milk and laxative never induce vomiting**

15. State the importance of observing good posture to the human body.

Observing good posture is crucial for maintaining overall health and well-being. Here are some key reasons why good posture is important:

- (i) **Reduces Back Pain:** Good posture helps distribute weight evenly across the spine, reducing the risk of back pain and strain on the spine and surrounding muscles.
- (ii) **Prevents Muscle Fatigue:** Proper alignment of the body minimizes muscle fatigue by allowing muscles to work more efficiently, reducing the likelihood of muscle aches and fatigue.
- (iii) **Improves Breathing:** Good posture allows the diaphragm to move freely, promoting better lung function and deeper, more efficient breathing.
- (iv) **Enhances Circulation and Digestion:** Proper posture ensures that internal organs are not compressed, improving blood circulation and aiding in better digestion.
- (v) **Boosts Energy Levels:** Maintaining good posture reduces the effort required by muscles to support the body, conserving energy and preventing unnecessary fatigue.
- (vi) **Supports Joint Health:** Proper alignment of the body reduces stress on joints, decreasing the risk of joint pain and conditions such as osteoarthritis.
- (vii) **Promotes a Positive Appearance:** Good posture improves physical appearance by promoting an upright and confident stance, which can positively affect self-esteem and body image.

- (viii) **Prevents Injuries:** By maintaining proper alignment, good posture helps prevent injuries, especially those related to repetitive strain or poor body mechanics.

The diagram below shows a fruit crop.
Use it to answer questions 16 and 17.



16. How is the above crop propagated?

It propagated by use of suckers and crown

17. Give one other crop which is propagated in the same way as the crop shown above.

Banana, red raspberry, forsythia, and lilac

18. Give any one way in which human beings can prevent tapeworm infection.

- **By eating well cooked beef and pork**
- **By deworming with drugs**
- **Washing hands before eating**
- **Washing fruits and greens well before eating**

19. How does smoking control the effect of bacteria in food preservation?

Smoking is an effective method of food preservation that helps control the growth of bacteria and other microorganisms through several mechanisms:

- (i) **Reduces water content of the food making it hard for bacteria to grow.**
- (ii) **Contain chemicals that kill bacteria**
- (iii) **Heat kills bacteria**
- (iv) **Make a protective coating on the food that prevents entry of bacteria.**

20. How are arteries able to withstand pressure of blood pumped from the heart?
They have thick, elastic walls muscular and small lumen
21. State any one way in which people use sand soil.
Sand soil is used in building
Sand soil is used for filtration of water
Growth of plants such as vegetables
Sand is used to make glasses
22. Give any one disadvantage of overcrowding chicken in their house.
It leads to faster spreading of infections
It makes it hard for the birds to access food and water
Fowl develop vices like feather pecking, and cannibalism
Inadequate exercise
Poor growth
23. Which part of a maize grain absorbs and supplies food to the embryo?
Cotyledon/ the scutellum
24. What is the importance of the black lining inside a solar drier?
Absorbs solar/heat energy
25. Mention any one factor considered when sorting clothes for washing.
Dirtiness – very dirty clothes are washed separately.
Loss of dyes – clothes that release dyes are separated from those that are easily stained.
Heavy items like towels should be washed separately from lighter weight clothes to prevent abrasion and damage to finer fabrics.
Separate clothes that shed lint from those that absorb lint
26. Apart from removing dirt, why should the udder and teats be washed with warm water before milking?
To stimulate release of milk
27. How does prolonged breastfeeding help in child spacing?
Breastfeeding prevents ovulation
28. What type of change is moulting in insects?
Biological change
29. How is a lunar eclipse formed?
The earth comes between the sun and the moon, earth casts a shadow on the moon
30. What determines the sinking or floating of an object in water?
The sinking object should be denser than water while floating objects are less dense than

water

31. How does covering of food during cooking help to conserve wood fuel?

Prevents heat loss

32. State **anyone** characteristic of images formed on the retina.

It is real

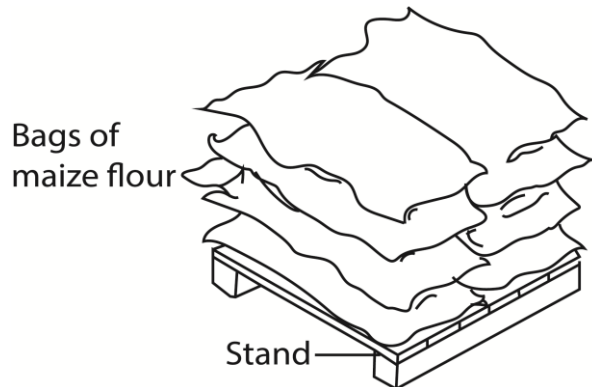
Inverted

Diminished

33. Why are eagles referred to as birds of prey?

Because they hunt and feed on other animals

34. The diagram below shows bags of maize flour in a store. Use it to answer the question that follows.



Why are the bags of maize flour put on such a raised stand?

To prevent moisture damage to the bags

To control pests

To allow easy cleaning

To improve air circulation

35. How is water as a renewable resource replaced in the environment?

It is replaced by rain/precipitation

36. Give anyone way in which proper disposal of wastes is important in our environment.

To prevent spread of germs and worms

To prevent bad sight and smell

Prevents air and water pollution

37. What would you do to a guitar string to make it produce a high pitched sound?

Tighten it
Use thinner string
Use shorter string

38. Why do the lungs expand during breathing in?

Because they are filled with/Inflated air that occupy space

39. Give **anyone** way in which the spread of Hepatitis B disease can be controlled.

Prevent contact with blood and tissue fluids of infected persons

Through vaccination

40. How are plants important in a food chain?

Plants produce food in a food chain

SECTION B: 60 MARKS

Questions 41 to 55 carry four marks each.

41. (a) Name the outermost layer of the human skin.

Epidermis

- (b) State **anyone** waste product removed by the skin.

Urea

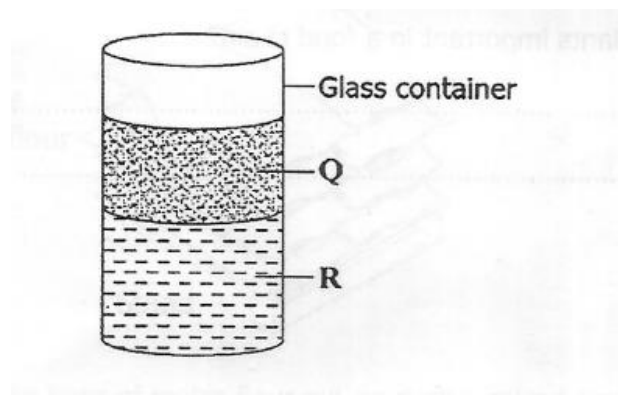
Water

Salts like sodium chloride

- (c) Apart from removing wastes, mention **two other** functions of the human skin.

- (i) Prevent entry of germs into the body
- (ii) Regulate body temperature
- (iii) Provides a protective barrier against mechanical, thermal and physical injury and hazardous substances.
- (iv) Prevents loss of moisture.
- (v) Reduces harmful effects of UV radiation.
- (vi) Acts as a sensory organ (touch, detects temperature).
- (vii) An immune organ to detect infections etc.

42. The diagram- below shows a glass container into which water and cooking oil were poured. The two liquids settled as shown. Study and use it to answer the questions that follow.



(a) Which of the two liquids is represented by:

Q – Cooking oil

R - Water

(b) State any one method that can be used to separate the two liquids.

By using a separating funnel

(c) Why has liquid Q settled on top of liquid R?

Cooking oil (Q) is less dense than water (R)

43. In the table below, part A shows processes in human reproduction.

Part B shows meaning of the processes in their wrong order.

A: Processes	B: Meaning
(a) Ovulation	Union of a sperm and an ovum
(b) Implantation	Release of Ovum from ovary
(c) Pregnancy	Attachment of the embryo on the uterus wall
(d) Fertilization	A period from fertilization to birth

Select from the table the correct meaning of the processes and write in the space provided below

(a) Ovulation - Release of ovum from ovary

(b) Implantation - Attachment of the embryo on the uterus walls

(c) Pregnancy - A period from fertilization to birth

(d) Fertilization - Union of sperm and ovum

44. (a) Write down any two causes of weathering of rocks.

Weathering describes the breaking down or dissolving of rocks and minerals on the surface of the Earth into small particles or soil

Causes

(i) Plant roots

(ii) Animals feet

- (iii) Changes in temperature
 - (iv) Ice
 - (v) Acids
 - (vi) Salts
 - (vii) oxygen
- (b) Apart from weathering, name the other process by which soil is formed

Decomposition of dead living things

- (c) How do living organisms in soil help to improve soil fertility?

- (i) **Fix nitrogen in root nodules**
- (ii) **Fix nitrogen in the soil**
- (iii) **Decomposition of organic matter**
- (iv) **Improve soil aeration**
- (v) **When dead and decomposed, add humus to the soil**

45. (a) Give the importance of each of the following components of oral rehydration solution (ORS) to a patient.

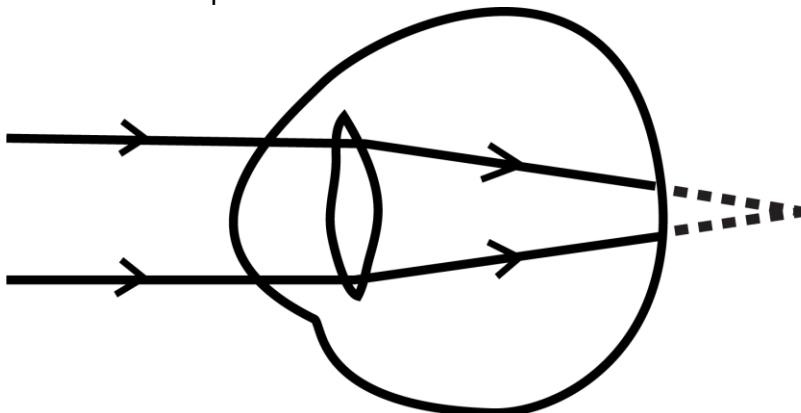
- (i) **Sugar: provides energy to the patient and also facilitates absorption of salts**
- (ii) **Water rehydrates the body/provide water to the body.**

- (b) Apart from using ORS, give two other ways of replacing 'lost fluids in a patient.

- (i) Drinking juice
- (ii) **Drinking water**
- (iii) **Drinking a solution of salt and sugar**
- (iv) **Giving intravenous fluids**
- (v) **Drink soup**

46. The diagram below shows a defect of the human eye. Study and use

it to answer the questions that follow.



- (a) Name the eye defect shown above.
Long sightedness
- (b) State the two causes of the eye defect shown above,
- (i) lens too weak
(ii) eye ball too short
- (c) What type of lens is used to correct the above eye defect?
Convex lens

47. The table below shows weather elements, instruments and their uses. Study and complete it correctly.

Element	Instrument	Use
Rainfall	<u>Rain gauge</u> -----	Measures amount of rainfall
<u>Humidity</u> -----	Hygrometer	Measures amount of water vapour in atmosphere
Wind	<u>Anemometer</u> -----	Measures speed of wind
Temperature	Thermometer	<u>Degree of hotness or coldness</u>

48. (a) State any two ways in which animals depend on other animals.
- (i) **Animals use others for food**
(ii) **Animals use others as shelter**
(iii) **Some animals like cows may scare insects and as these fly are spotted by birds**
(iv) **Bird may eat parasites from the body of animals like cows**
- (b) Give any two ways in which plants depend on other plants,
- (i) **For support for example climbing plants**
(ii) **Some plants are parasites on others**
(iii) **Some plants enjoy shade from others plants**
49. The following is a list of animals that belong to different classes of vertebrates. Use it to answer the questions that follow,
Monkey, Parrot, Crocodile, Tilapia
- (a) In which class of vertebrates does a crocodile belong?
- Reptile**
- (b) Name the class of vertebrate which is not represented in the above list.
- Amphibians**

(c) Identify any one animal from the above list which is cold blooded.

Tilapia and crocodile

(d) How is the reproduction of tilapia different from that of a parrot?

Tilapia uses external fertilization while parrots use internal fertilization

50. (a) Give one reason why drugs should be kept;
- (i) away from, moisture and sunlight.

Medicines are destroyed/decomposed by moisture and direct sunshine

- (ii) out of reach of children.

Children may accidentally consume and get poisoned by the drugs.

- (b) State any two ways in which people in a family can misuse drugs.
- (i) Use of drugs for wrong purpose
 - (ii) Taking wrong dose
 - (iii) Taking a drug for someone else
 - (iv) Sharing drugs
 - (v) Buying a drug without doctor's prescription

51. (a) What germ causes mastitis in cattle?

Bacteria

- (b) Give any two signs of mastitis. (i)
- (i) swelling
 - (ii) increase in temperature
 - (iii) clots, flakes in milk
- (c) State any one way of controlling mastitis in cattle.

- (i) Proper hygiene
- (ii) Antibiotics

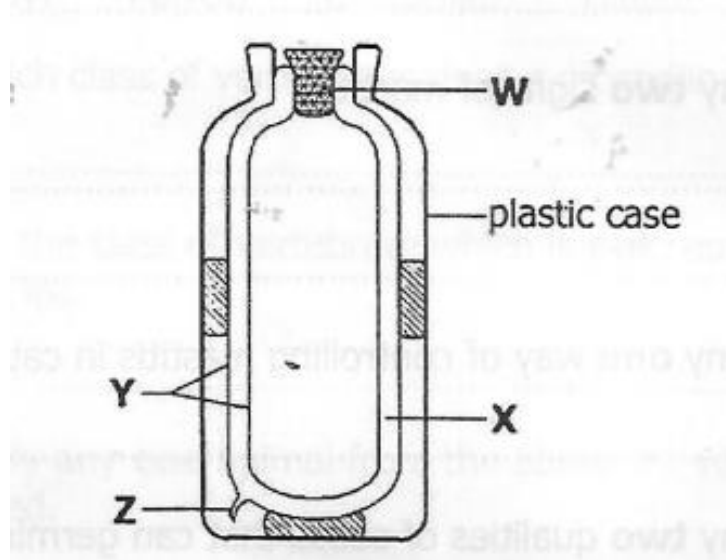
52. (a) Give any two qualities of seeds that germinate

- (i) Good color
- (ii) Good size
- (iii) Higher physical soundness and weight.
- (iv) Good genetic purity

- (b) State any **two farm** practices which help in controlling insect pests in a garden
- (i) Crop rotation

- (ii) scaring pests with scare crow
- (iii) trapping
- (iv) Burning/burring infected plants
- (v) Weeding

53, The diagram below is of a thermos flask. Study and use it to answer the questions that follow.



(a) Name the parts labeled Y and Z.

- (i) Y: **Silvered/shiny walls.**
- (ii) Z: **Vacuum seal**

(b) Give **anyone material** that can be used for making part W,

Plastic, rubber, wood

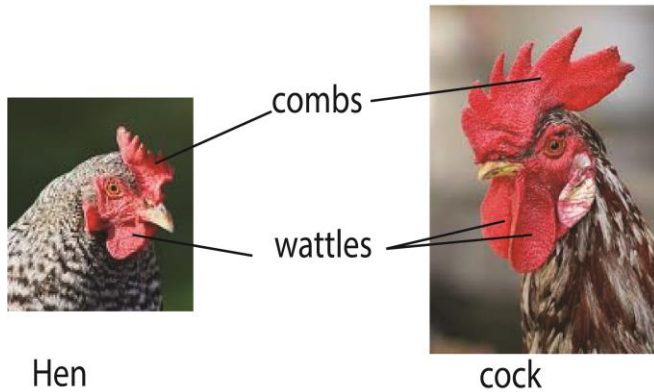
(c) Why is part X able to prevent heat loss by conduction and convection?

It is a vacuum

54. (a) State any **two** differences between the external parts of a hen and that of a cock.

- (i) **Cocks have larger combs**
- (ii) **Cocks have larger wattles**
- (iii) **Cocks have larger spurs on the back of the shank (leg)**

Comb and wattles



- (b) Write down **any one** product got from poultry birds .

Eggs

Meat

- (c) Give **anyone way** in which farmers can improve on the quality of their local breeds of chicken .

Maintain the coop.

Protect the flock against disease.

Invest in quality feed.

By artificial selection

55. (a) Give any two possible .ways through which a baby can get HIV/AIDS from the mother.

- (i) Through the placenta his is most likely to happen in the last few weeks of pregnancy**
- (ii) During labour, or delivery.**
- (iii) Breastfeeding your baby can also transmit HIV, because HIV is in your breast milk.**

- (b) State **two ways** in which an HIV positive pregnant woman can protect her unborn baby from getting HIV/AIDS.

- (i) Taking antiretroviral treatment to protect your baby**
- (ii) Use formula feed to the baby other than breastfeeding.**
- (iii) Having safe delivery of baby**

End

