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INDIAN SCHOOL SALALAH

SECOND TERM EXAMINATION, FEB - MARCH 2026

SCIENCE-086

Class: VIII **Date: :01-03-2026**

Time: 3 HRS **Maximum Marks:80**

General Instructions:

a. **This question paper consists of 39 questions in 3 sections. Section A is Biology, Section B is Chemistry and Section C is Physics.**

b. **All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.**

SECTION A- BIOLOGY

1 Which of the following is a correct example of a population**?** **1**

A. All animals and plants in a forest

B. All fish in a pond of the same species

C. A frog and a snake in a pond

D. All organisms in a pond including fish, plants, and insects

2 Why does sexual reproduction help a species adapt better over time than asexual reproduction? **1**

A. It produces more offspring

B. It is faster

C. It creates variation by combining genes from two parents

D. It always produces stronger offspring

3 Why is an inactivated toxin used in the tetanus vaccine instead of the active toxin? **1**

A. Active toxin is cheaper

B. Inactivated toxin cannot cause disease but can trigger immunity.

C. Active toxin works faster

D. Inactivated toxin destroys immune cells

4 Each gamete contains: **1**

A. A complete set of genetic instructions

B. No genetic material

C. Half of the parent's genetic material

D. Double the genetic material

5 Which combination of practices helps reduce **water-borne diseases** most effectively? **1**

A. Vaccination and exercise

B. Boiling water and good sanitation

C. Mosquito control and hygiene

D. Mask wearing and isolation

6 Mangrove forests protect coastal areas mainly by **1**

A. Producing fruits

B. Absorbing oxygen

C. Reducing the effect of storms and floods

D. Increasing rainfall

7 Which disease affects the **intestine**? **1**

A. Tuberculosis

B. Typhoid

C. Asthma

D. Diabetes

The following one question consists of two statements – **Assertion** (A) and **Reason** (R). Answer this question by selecting the appropriate option given below:

A. Both A and R are true, and R is the correct explanation of A.

B. Both A and R are true, and R is not the correct explanation of A.

C. A is true but R is false.

D. A is false but R is true.

8 **Assertion (A):** Tuberculosis is a communicable disease. **1**

Reason (R): It is caused by bacteria and spreads through air.

9 What is acquired immunity? How is it developed through vaccination? **2**

OR

What are pathogens? How do vectors help in transmitting diseases?

10 a) Name the male and female gametes in animals. **2**

b) How does fertilization and development take place in birds?

11 A doctor refuses to prescribe antibiotics to a patient with sore throat, fever and reddish rashes on the neck and other parts of the body. **3**

a) Identify the diseases.

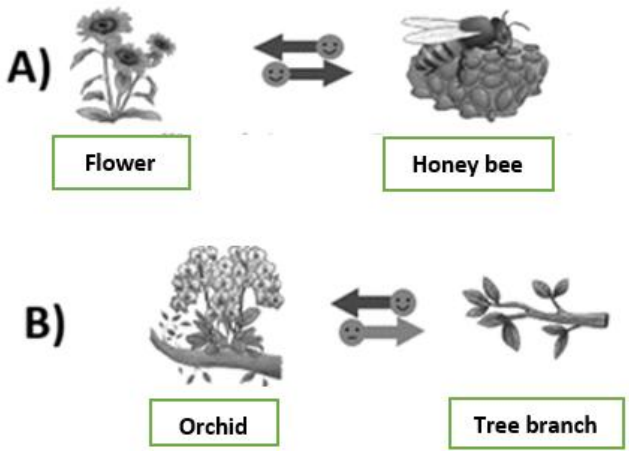
b) Give one scientific reason for not prescribing antibiotics.

c) Explain the risk of unnecessary antibiotic use.

12 a) Identify the type of interactions given in the images (A) and (B) **3**

b) What will happen if all the bees are removed from the ecosystem?

c) Name the organism that is benefited and not affected in the interaction (B).



13 A forest ecosystem consists of: **4**
Trees, shrubs, grasses, insects, birds, fox, deer, tigers, fungi, and bacteria. The plants prepare food using sunlight, water, and carbon dioxide. Herbivores like deer feed on plants, while carnivores like tigers depend on herbivores for food. Decomposers also play an important role in the ecosystem. However, due to excessive deforestation, many trees are cut down in the ecosystem.

A Make a simple food chain with list of organisms given in the paragraph.

B How does deforestation affect the **food chain** in the forest? (Any two points)

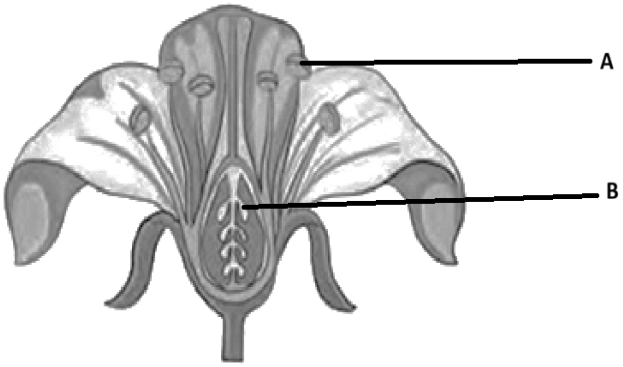
C(I) **Attempt either option (I) or (II).**

What role do **decomposers** play in maintaining ecosystem balance? (Two points)

OR

C(II) How does energy flow in the given forest ecosystem? Explain briefly.

14(I) **Attempt either option (I) or (II).** **5**



a) In the given diagram label the parts A and B

b) What is the role of A and B in sexual reproduction in plants?

c) How are seeds and fruits formed after fertilisation in plants?

OR

14(II) What are the major threats to life on Earth? Explain any two in detail.

SECTION B - CHEMISTRY

15 Cement is made using minerals such as: **1**

A. Mica and talc

B. Calcite and quartz

C. Gold and silver

D. Pyroxene and olivine

16 Which element is a metalloid? **1**

A. Gold

B. Oxygen

C. Silicon

D. Hydrogen

17 In a solution of alcohol and water where there is more water than alcohol, what is the solute? **1**

A. Water

B. Both are solutes

C. Both are solvents

D. Alcohol

18 What happens to the solute when it dissolves in the solvent? **1**

A. It forms a new element.

B. It spreads evenly throughout the solvent.

C. It remains visible and separate.

D. It changes into a gas.

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19 **Assertion (A):** **1**

Fish are more comfortable in cold water compared to warm water.

Reason (R):

Cold water contains more dissolved oxygen than warm water.

20 A. A rectangular brick used in building a wall has a mass of 1200 g. The length, breadth, and height of the brick are 10 cm, 8 cm, and 8 cm respectively. **2**

Find the density of the brick.

B. Solids such as iron or steel are often used to support heavy loads in bridges and buildings. Although these solids experience large pressures, their density does not change appreciably. Why?

21 A. Water, a compound, has different properties compared to those of the elements oxygen and hydrogen from which it is formed. Justify this statement. **2**

B. A student claims that lime water can test oxygen present in air. If this claim is correct, justify your answer scientifically.

22 A. Explain the difference between a native mineral and a mineral that is a compound. **2**

B. Identify the correctly matched set. Give reason for your choice.

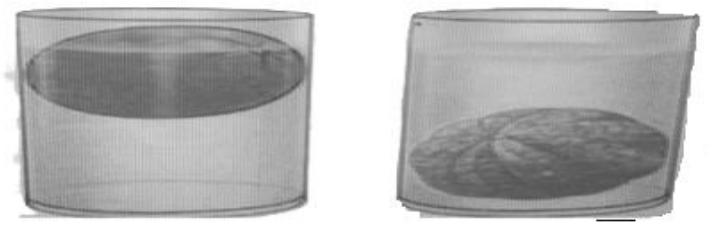
(i) Pure substances — gold, sugar, oxygen, water

(ii) Elements — hydrogen, nitrogen, water, iron

(iii) Compounds — carbon dioxide, water, methane, brass

(iv) Non-uniform mixtures — sand and water, oil and water, soil, salt solution

23 A. Observe the following figure in which the two cases of an orange placed in water— one with peel and one without peel. **3**



Analyse why the orange with peel floats while the peeled orange sinks.

B. Explain how pressure and temperature change as you go deeper into the Earth. Why do these changes occur?

OR

A. Why does hot air rise above cold air in the atmosphere?

B. Reema has a piece of modeling clay that weighs 120 g. She first moulds it into a compact cube that has a volume of 60 cm^3. Later, she flattens it into a thin sheet. Predict what will happen to its density. Why?

24 A. Iron filings and sulphur powder were mixed and divided into two parts, A and B. Part A was strongly heated to form a new substance C, while part B was left unheated. **3**

i) What happens when a magnet is rolled in part B?

ii) Name the gas which is evolved when hydrochloric acid added to part A?

iii) Write a word equation for the reaction between iron filings and sulphur?

B. Describe the differences between brass, and bronze in terms of their composition.

25 When two or more substances are mixed, where each substance retains its properties, it is called a mixture. The individual substances that make up a mixture are called its components. The components of a mixture do not react chemically with each other. Compounds like water have properties that are distinct from the elements they are made from, and their constituent elements cannot be separated by any physical method. **4**

A Why is air considered as a mixture not a compound?

B Why do compounds always have properties different from their constituent elements?

C(I) Distinguish between uniform and non-uniform mixtures.

OR

C(II) Why can mixtures be separated by physical methods but compounds require chemical or electrochemical methods?

26(I) A. Ice floats on water even though both are made of the same substance. Analyze the reason for this behavior based on density and molecular arrangement. **5**

B. A student is asked to find the volume of an uneven pebble using a measuring cylinder. Describe the steps the student should follow.

C. Puja was helping her mother in the kitchen. She observed that when her mother added sugar to hot tea, it dissolved quickly and completely. However, when she added same amount of sugar to same volume of cold water, it took much longer to dissolve.

a. Why did sugar dissolve faster in hot tea than in cold water?

b. What type of solution was formed when no more sugar could dissolve in the tea?

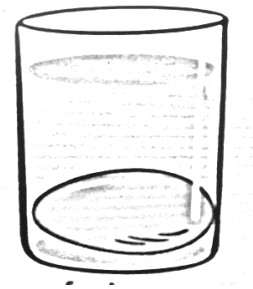
OR

26(II) A. A saturated solution of sugar present at 80^0 C is cooled to 10^0 C. What change will you observe and why does it happen?

B. A student adds salt to water and keeps stirring. After some time, the salt stops dissolving and settles at the bottom. What type of solution is formed and how can the student convert it into an unsaturated solution?

C. The terms “dilute” and “concentrated” are considered relative rather than absolute. Give an example to support this statement.

D. Take a glass tumbler and fill it with tap water. Carefully place a raw whole egg into the water and observe that it sinks to the bottom.



Trouble shoot: What change can you make to this setup to make the egg float in water instead of sinking? Explain the principle behind it.

SECTION C - PHYSICS

27 In the Figure, note that **O** stands for object, **M** for mirror, and **I** for image. **1**

Which of the following statements is true?

A. Figure (a) indicates a plane mirror, and Figure (b) indicates a concave mirror.

B. Figure (a) indicates a convex mirror and Figure (b) indicates a concave mirror.

C. Figure (a) indicates a concave mirror and Figure (b) indicates a convex mirror.

D. Figure (a) indicates a plane mirror, and Figure (b) indicates a convex mirror.

(a)

(b)

28 Which instrument is used to detect the magnetic effect of current in this activity? **1**

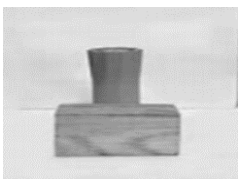
A. Ammeter

B. Voltmeter

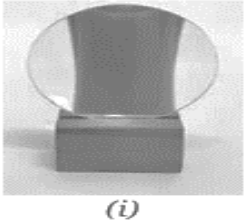
C. Magnetic compass

D. Galvanometer

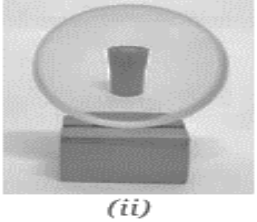
29 Figure A shows the actual size of an object. The figures (i), (ii), and (iii) show an object viewed through three different optical devices. Which of the following correctly matches the arrangement and the optical device used? **1**



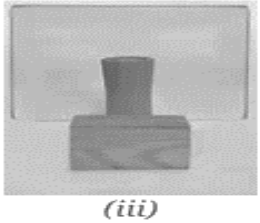
A



(i)



(ii)



(iii)

A. (i) – Concave lens, (ii) – Convex lens, (iii) – Plane mirror

B. (i) – Convex lens, (ii) – Concave lens, (iii) – Plane glass slab

C. (i) – Plane mirror, (ii) – Convex lens, (iii) – Concave lens

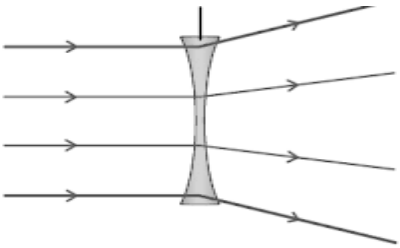
D. (i) – Convex mirror, (ii) – Concave mirror, (iii) – Plane mirror

30 Who invented the first battery? **1**

A. Thomas Edison B. Michael Faraday

C. Hans Oersted D. Alessandro Volta

31 Which property of lens is being demonstrated? **1**



A. Diverging rays

B. Converging rays forming a virtual image

C. Reflection of light

D. Lateral inversion

32 Main use of lifting electromagnets is: **1**

A. Separate plastic materials

B. Increase resistance in a circuit

C. Picking wood

D. Picking heavy iron/steel objects in factories

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33 **Assertion:** Left and right get swapped when you look at yourself in a mirror. **1**

Reason: The image formed by a plane mirror is real and inverted.

34 A. Maya was reading a science book and found the letters too small to read clearly. She used a magnifying glass and noticed that the letters appeared bigger and upright. **2**

a. What type of lens is used in a magnifying glass?

b. Where should the object be placed to get a magnified image?

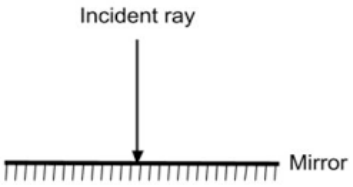
c. Is the image formed real or virtual?

d. Name one device that uses the same type of lens.

OR

B. With the help of a **ray diagram**, explain why a concave mirror is called a converging mirror. Write any one use of concave mirror.

35 A. Draw a ray diagram where the angle between the incident ray and the mirror surface is 50°. Calculate the angle of incidence. **3**



B. A light ray strikes a mirror normally. Describe the path of the reflected ray and find the angle of reflection.

C. A person stands in front of a plane mirror. The distance between the mirror and his image is 10m. If the person moves 4m towards the plane mirror, what would be the distance between the person and his image?

36 A. Three wires of equal length are tested for heating effect by passing the same current. **3**

Wire material	**Resistance (Ω)**
Copper	2
Iron	5
Nichrome	10

i. Which wire produces the maximum heat? Why?

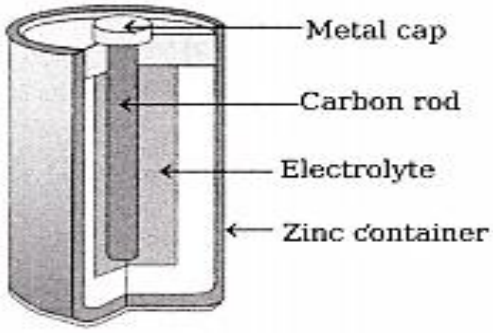
ii. Write any ***two*** advantages and disadvantages of heating effect of electric current.

37 Observe the figure of a dry cell shown below and answer the following: **3**

(a) What is a dry cell?

(b) Name the part that acts as the positive and the negative terminal of the dry cell.

(c) What is the role of the electrolyte in the dry cell?



38 Light is a form of energy that enables us to see objects around us. When light strikes a surface, it can bounce back, a phenomenon called reflection, which is used in mirrors to form images. If light passes from one medium to another, such as from air to water, it bends due to a change in speed—this bending is called refraction, and it explains effects like a straw appearing bent in a glass of water. Lenses use the principle of refraction to converge or diverge light rays, allowing us to focus images, magnify objects, or correct vision. Together, these phenomena help us understand and control how light behaves in everyday life. **4**

A State laws of reflection.

B A door peephole is designed to allow a person to see a wide area outside the door. Which type of lens is used in a peephole, and why is it suitable for this purpose?

C(I) **Attempt either option (I) or (II).**

What happens when a convex lens is placed in the path of sunrays? Describe a simple activity to show this.

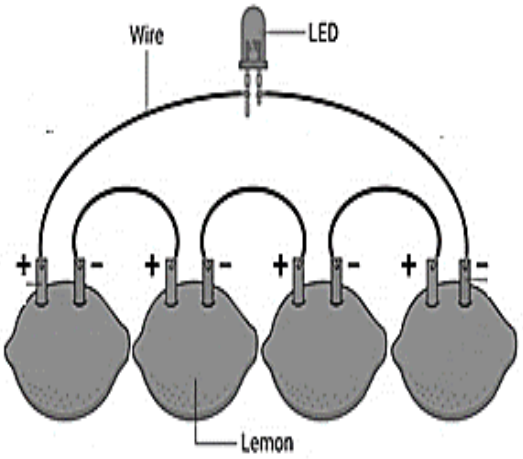
OR

C(II) Write an activity to show that convex lens can form both real and virtual images.

39(I) **Attempt either option (I) or (II).** **5**

A. With the help of a diagram describe the key components of a Voltaic cell and explain how it generates electricity.

B. Students connected copper strips and iron nails in lemons and joined several lemons together to light an LED. When properly connected, the LED glowed.



i) What role does lemon juice play in the setup?

ii) Why are different metals used?

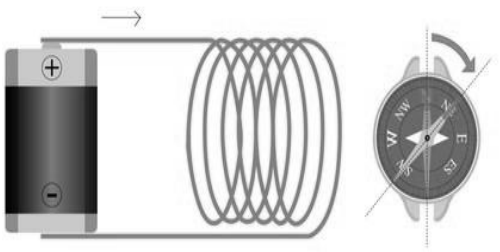
iii) What happens if connections are reversed in LED?

iv) What does the glowing LED indicate?

OR

39(II) A. Explain the magnetic effect of electric current. How can the strength of the magnetic field produced by a current-carrying coil be changed? (2 points)

B. An electromagnet is placed near a magnetic compass. When current flows through the coil, the compass needle deflects. When the current is reversed, the direction of deflection also changes.



i) What does the deflection of the compass needle indicate?

ii) Why does the needle return to its original position when current is switched OFF?

iii) What happens to the poles of the electromagnet when the direction of current is reversed?