BK BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS

SENIOR SECONDARY CO-ED DAY CUM BOYS' RESIDENTIAL SCHOOL

ANNUAL EXAMINATION 2024-25

SCIENCE MARKING SCHEME

Class: VIII **Duration: 3 Hrs**

Date: 12/03/'25 **Max. Marks: 80**

Section-A

Select and write the most appropriate option out of the four options given for each of the questions 1 - 20. There is no negative mark for incorrect response.

1. (a) Noble 1

2. (c) Sulphur 1

3. (b) Bronze 1

4. (b) More 1

5. (b) Electrolyte 1

6. (b) Proton 1

7. (c) Carbon dioxide 1

8. (a) Air 1

9. (d) All of these 1

10. (c) Hermaphrodites 1

11. (a) Adrenaline 1

12. (b) Fallopian tube 1

13. (a) Record of all endangered species. 1

14. (b) Cellulose

1

15. (b) Biosphere reserve 1

16. (c) Ribosomes 1

Direction: The question below consists of an Assertion (A) and a Reason (R). Use the following key to choose the appropriate answer.

(a) If both assertion and reason are correct and reason is correct explanation of the assertion

(b) If both assertion and reason are correct, but the reason is not the correct explanation of the assertion.

(c) If assertion is correct, but reason is incorrect.

(d) If assertion is incorrect, but reason is correct.

17. (d) If assertion is incorrect, but reason is correct. 1

18. (b) If both assertion and reason are correct, but the reason is not the correct explanation of the assertion.

1

19. (a) If both assertion and reason are correct and reason is correct explanation of the assertion 1

20. (a) If both assertion and reason are correct and reason is correct explanation of the assertion 1

Section-B

Question No. 21 to 26 are very short answer questions

21. Electroplating is a process that uses electricity to coat a material with a thin layer of metal.

- Used in jewellery. 1+1
- Purification of metals.
- Changing the texture of metal surfaces.
- Preventing corrosion.

22. (a) The causes for loss of biodiversity are
Deforestation: The trees in forests are being cut to build residential areas, industries, to grow crops.
Over exploitation : People are miss using the natural resources. resources. 1

. (b) rich biodiversity is crucial for ecosystem health, agricultural productivity, species survival, and human nutrition. It supports life on Earth and is essential for sustainable development. 1

23. Removing a species from a food chain can disrupt the balance of the ecosystem, affecting survival of other species and biodiversity. When a species is removed, the biodiversity of the ecosystem can decrease, making it more vulnerable to disturbances and less resilient. 2

24. The cell theory was proposed by Schleiden, Schwann and Virchow.
1.All living organisms are composed of one or more cells.
2.The cell is the basic unit of structure, function, and organization in all organisms.
3.All cells come from pre-existing , living cells. 2

OR

(a) A nucleus consists of nuclear membrane, chromosomes, nucleoplasm, and nucleolus.
Nuclear Membrane: This is a double membrane structure enclosing nuclear content 1
(b) The nucleus controls and regulates the activities of the cell (e.g., growth and metabolism) and carries the genes, structures that contain the hereditary information. 1

25. Hold one end of a ruler firmly on a table, then pluck the other end with your finger; you will see the ruler vibrate while simultaneously hearing a sound, indicating that the vibrations are directly responsible for the sound production 2

26. The method of charging by induction. 2

The charging by induction process is where the charged particle is held near an uncharged conductive material that is grounded on a neutrally charged material. The charge flows between two objects and the uncharged conductive material develop a charge with opposite polarity.

OR

The method of charging by Friction. 2

Charging by friction" is a method of creating an electric charge on an object by rubbing it against another object, causing electrons to transfer between the two surfaces, resulting in one object gaining a positive charge and the other gaining a negative charge;

Section-C

Question No. 27 to 33 are short answer questions

27. It should produce a large amount of heat. 1+1+1

It can be easily transported.
It has a high calorific value.
It should burns easily in the air at a moderate rate.

.

28.

Acid rain is rain that is acidic due to pollutants in the air. It can also include snow, sleet, hail, fog, and dust. Acid rain is caused by the release of sulphur dioxide and nitrogen oxides into the atmosphere. 1+1+1

. Damage to aquatic ecosystems, Forest decline , Corrosion of buildings and structures,Soil acidification:

OR

(a) Domestic waste, agricultural runoff, industrial effluents, oil spills etc. 2

(b) Chlorine, chloramines, and chlorine dioxide are chemicals used to purify water. 1

29.

Plant cell	Animal cell
1. The cell wall is the outermost covering on the cell. The plant cells have both cell wall and the cell membrane	1. The cell membrane or plasma membrane is the outermost covering of the cell. The animal cells do not have cell wall
2. The vacuoles are large and centrally placed.	2. The vacuoles are small and uniformly distributed in the cytoplasm.
3. There are plastids in the plant cells. The chloroplasts have chlorophyll.	3. The plastids are absent in the animal cells.
4. The lysosomes are absent in the plant cells.	4. Lysosomes are present in the animal cells. They contain digestive enzymes.
5. The cytoplasm is thin and pushed to the periphery due to central vacuole.	5. The cytoplasm is dense and granular. It is uniformly spread throughout the cell.

½ x6=3

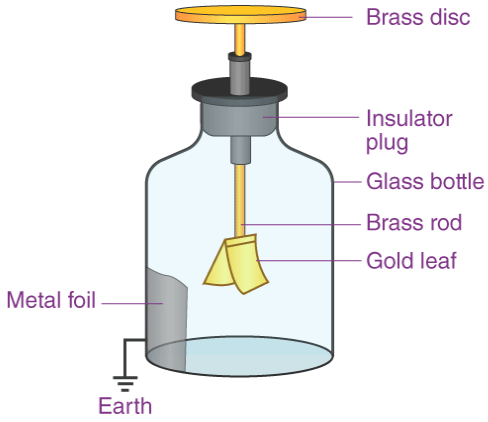
30. (a) (i) Male 1

(ii) Female 1

(b) 46 Chromosomes. 1

31.

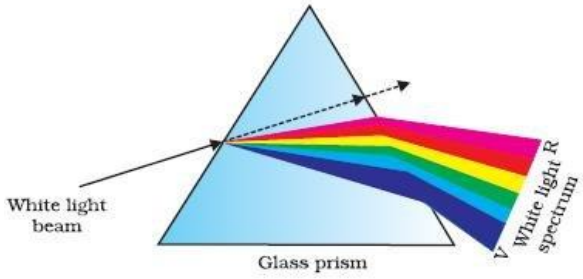
A gold leaf electroscope is a device used to detect the presence and polarity of an electric charge on an object, consisting of a metal rod with a metal knob at the top and two thin, very lightweight gold leaves attached to the bottom, which diverge when charged due to electrostatic repulsion; when a charged object touches the knob, the charge transfers to the leaves, causing them to repel each other and spread apart, indicating the presence of a charge.



1+2

32.

Dispersion of light is the phenomenon where white light splits into its constituent colors (like violet, indigo, blue, green, yellow, orange, and red) when passing through a transparent medium like a glass prism, due to different colors of light bending at different angles during refraction; essentially, different wavelengths of light travel at different speeds within the medium, causing the separation of colors



1+2

33.

Artificial satellites.

Artificial satellites are satellites made by man and sent to space for various purposes.

What are the uses of artificial satellite?

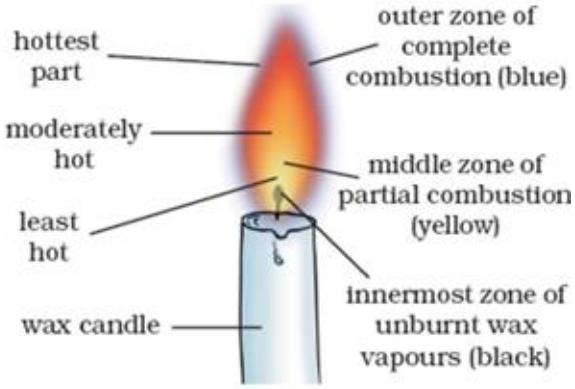
- **They are used in communication (including satellite television and telephone calls.)**
- **They are used in weather forecasting**
- **They are used in GPS (Global Positioning System) for find places while travelling.**
- **They are used in educational purposes**
- **helps to learn more about ocean.**
- **used in military purposes.**
- **Explore other planets.**

1+2

Section-D

Question No. 34 to 36 are long answer questions.

34. (a)



2

A candle flame consists of three main zones:

Innermost Zone (Dark Zone):

This is the base of the flame, appearing dark and cool in color due to the presence of unburnt wax vapors rising from the wick; it has the least heat as there is limited oxygen supply in this region.

Middle Zone (Luminous Zone):

This is the bright yellow part of the flame where partial combustion occurs. Due to limited oxygen, the fuel particles burn incompletely, producing soot particles that give the flame its yellow color.

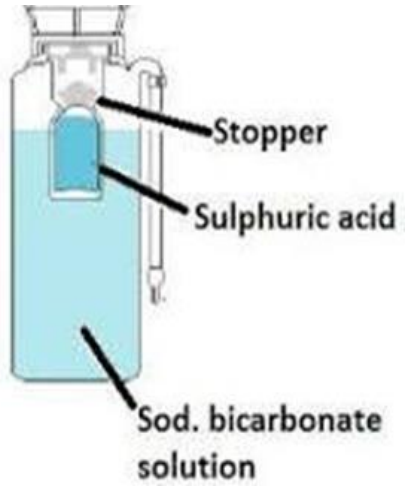
Outermost Zone (Non-Luminous Zone):

This is the outermost layer of the flame, appearing blue and being the hottest part. Here, complete combustion takes place as there is ample oxygen supply, resulting in the most efficient burning.

. 3

OR

(a)

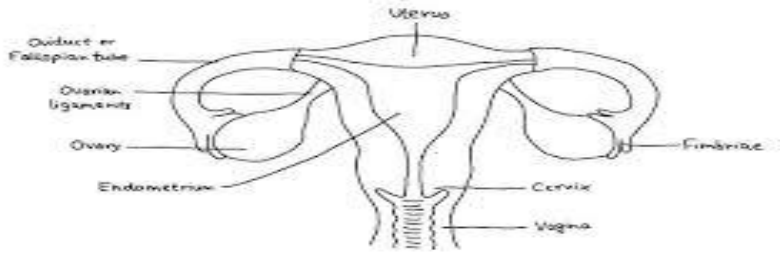


2

A soda-acid fire extinguisher works by mixing sodium bicarbonate (baking soda) with sulfuric acid, which produces carbon dioxide gas when they react, effectively smothering the fire by cutting off oxygen supply. 1

· $2NaHCO_3$ (sodium bicarbonate) + H_2SO_4 (sulphuric acid) → Na_2SO_4 (sodium sulphate) + $2H_2O$ (water) + $2CO_2$ (carbon dioxide) 2

35. (a)



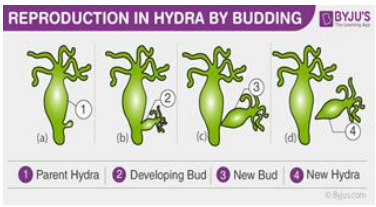
(b) ovaries produce eggs (ova) and female sex hormones like estrogen and progesterone, while testes produce sperm and the male sex hormone testosterone 1+1

(c)

Viviparous organism	Oviparous organism
• Organisms do not lay eggs.	• Organisms lay eggs.
• Young one develops inside female's body.	• Young one develops outside female's body.
• Ex: birds,mammals	• Ex: fishes, amphibians

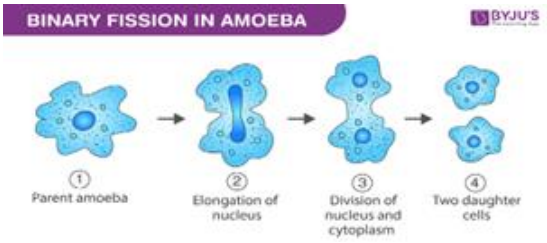
OR

(a) By Budding: hydra produce small projection call bud. Later it gets cut and grows into new yeast or hydra.



1+1

(b)



Binary Fission• Most common method in unicellular organisms.

• It is division of the parent cell into two identical daughter cells.

Amoeba, Paramecium, bacterium 1+1

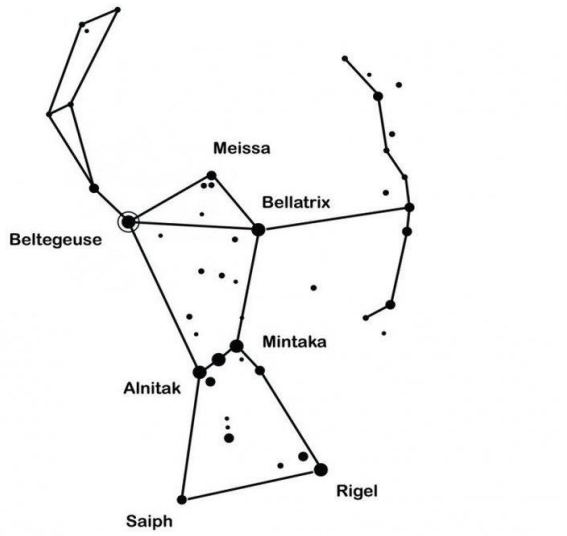
(c)

The advantages of sexual reproduction over asexual reproduction are that sexual reproduction increases genetic diversity. This can lead to increased resistance to disease, more evolution, and decreased recessive disorders.

36.

A constellation is a group of stars that appear to form a recognizable pattern in the night sky, often named after mythological figures or animals they resemble; in India, the constellation commonly known as "Laghu Saptarishi Mandal" is Ursa Minor (Little Bear)

showing three prominent stars in a straight line representing Orion's belt (labeled as Alnitak, Alnilam, and Mintaka), with two bright stars on either side, Betelgeuse (upper left) and Rigel (lower right), forming a recognizable hunter figure



OR **1+1+3**

What is a light year? How many kilometers make one light year? The distance between the Earth and the Sun is 150 x 10^6 km. Express this distance in light years.

The distance light travels in one year is defined as one light year. - One light year is approximately equal to 9.461×10^{12} kilometers.

1 ly = 9.461×10^{12} kilometers.

1 km = 1 ly/9.461×10^{12}

=150 x 10^6 x 1ly/9.461×10^{12}

The distance between the Earth and the Sun, expressed in light years, is approximately 1.58 x 10^{-5} light years

2+3

Section-E

Question No. 37 to 39 are case-based/data -based questions with 2 to 3 short sub-parts. Internal choice is provided in one of these sub-parts. (1+1+2=4)

37. **Read the passage carefully and answer the following questions**.

(a)The pituitary gland is also called the master gland because it controls the activities of other glands. 1

(b) In frogs thyroxine hormones regulate metamorphosis. 1

(c)The transformation of a larva into an adult involving sudden and series of continuous changes in the body of an animal during its life cycle is called metamorphosis 2

OR

(c) When person is suffering from sugar problems, it means that his pancreas is not producing sufficient quantities of insulin hormone.So individual suffers from diabetes mellitus. 2

38. **Read the passage carefully and answer the following questions.**

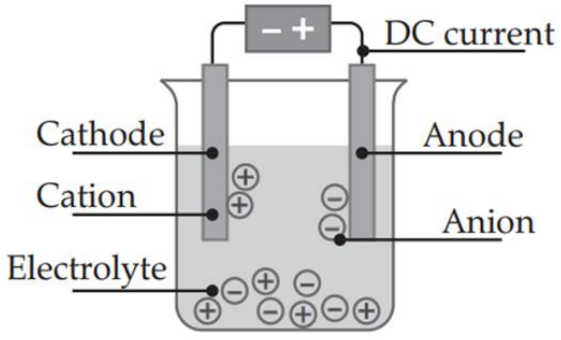
(a) (iii) Water 1

(b) (ii) Electroplating 1

(c) (iv) Electrolyte, electrode 2

OR

(c) 2



39. **Read the passage carefully and answer the following questions.**

(a) Reflection of light is when light bounces off a surface or boundary. 1

(b) Diffuse reflection is when light reflects in multiple directions after hitting a rough surface. It's also known as irregular reflection. 1

(c) i=r

angle between the incident ray and the reflected ray is 90°

so i =r =45° 2

OR

(c) i=r

The angle between the incident ray and the Plane mirror is 30°.

so i =r =60° 2

*****Best of Luck*****