



**BK BIRLA CENTRE FOR EDUCATION**  
SARALA BIRLA GROUP OF SCHOOLS  
SENIOR SECONDARY|CO-ED DAY CUM BOYS' RESIDENTIAL SCHOOL  
**ANNUAL EXAMINATION 2024-25**  
**SCIENCE**



**Class: VIII**  
**Date: 12/03/'25**  
**Name: \_\_\_\_\_**

**Duration: 3 Hrs**  
**Max. Marks: 80**  
**Exam no: \_\_\_\_\_**

**General Instructions:**

- i. This question paper consists of 39 questions in 5 sections.
- ii. All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.
- iii. Section A consists of 20 objective type questions carrying 1 mark each.
- iv. Section B consists of 6 Very Short questions carrying 02 marks each. Answers to these questions should be in the range of 30 to 50 words.
- v. Section C consists of 7 Short Answer type questions carrying 03 marks each. Answers to these questions should be in the range of 50 to 80 words.
- vi. Section D consists of 3 Long Answer type questions carrying 05 marks each. Answer to these questions should be in the range of 80 to 120 words.
- vii. Section E consists of 3 source-based/case-based units of assessment of 04 marks each with sub-parts

**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. Helium and argon are \_\_\_\_\_gases. 1  
(a) Noble      (b) Reactive      (c) Poisonous      (d) None of these
2. \_\_\_\_\_ is used in vulcanisation of rubber. 1  
(a) Chlorine      (b) Phosphorous      (c) Sulphur      (d) All of these
3. Alloy with 88% copper and 12% tin is \_\_\_\_\_. 1  
(a) Brass      (b) Bronze      (c) Solder      (d) Magnalium
4. The calorific value of wood when compared to LPG is \_\_\_\_\_. 1  
(a) Less      (b) More      (c) Same      (d) Almost negligible
5. A \_\_\_\_\_ contains positively and negatively charged ions. 1  
(a) Electrode      (b) Electrolyte      (c) Insulator      (d) Non-electrolyte

6. The nucleus contains positively charged particles called\_\_\_\_\_. 1  
(a) Electron (b) Proton (c) Neutron (d) None of these
7. Which of the following is a greenhouse gas? 1  
(a) Nitrogen (b) Oxygen (c) Carbon dioxide (d) Methane
8. In which of the following materials, is the speed of sound minimum? 1  
(a) Air (b) Water (c) Steel (d) None of these
9. An object can be charged by: 1  
(a) Friction (b) Conduction (c) Induction (d) All of these
10. The organisms having both the male and female sex organs present in the same body are called: 1  
(a) Unisexual (b) Multisexuals (c) Hermaphrodites (d) Asexual
11. Which of these hormones is secreted by the endocrine gland located on the top of the kidneys? 1  
(a) Adrenaline (b) Insulin (c) Progesterone (d) Thyroxin
12. Which of the following is the site of fertilisation in humans? 1  
(a). Uterus (b) Fallopian tube (c) Ovary (d) Vagina
13. What information can be likely obtained from the Red Data Book? 1  
(a) Record of all endangered species.  
(b) Information of all endemic species.  
(c) Categorisation of plants and animals according to species.  
(d) Information of all plant and animal species of the country.
14. Plant cell wall is mainly composed of: 1  
(a) Sugars (b) Cellulose (c) Proteins (d) Lipids
15. \_\_\_\_\_ is a huge area that offers protection to plants, animals and also tribal communities in a forest. 1  
(a) Zoo (b) Biosphere reserve (c) Protected area (d) Park
16. \_\_\_\_\_ are the tiny structures found either attached to endoplasmic reticulum or are found scattered in the cytoplasm. 1  
(a) Oxysomes (b) Centrosomes (c) Ribosomes (d) Chromosomes

**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. **Assertion (A):** The eye cannot see the object at far distance. 1  
**Reason (R):** The comfortable distance at which the eye can read the object is 25 cm.
18. **Assertion (A):** Most of the metals can be beaten into sheets. 1  
**Reason (R):** Most of the metals are ductile.
19. **Assertion (A):** We need to conserve our forest and wildlife. 1  
**Reason (R):** Rapid decline in wildlife population and forestry has been observed.
20. **Assertion (A):** In sexual reproduction, offspring are not identical to the parents or amongst themselves. 1  
**Reason (R):** Sexual reproduction involves the fusion of male and female gametes

### Section-B

**Question No. 21 to 26 are very short answer questions**

21. Define electroplating. Write any two uses of electroplating. 2
22. (a) Explain any two causes for loss of biodiversity. 1  
(b) Write two importance of biodiversity. 1
23. Why is removal of one species from environment would drastically affect the survival of another species. Give one example 2
24. Who proposed the cell theory? State the postulates of cell theory. 2

**OR**

- (a) Explain the structure of Nucleus 1  
(b) Mention the functions of Nucleus 1
25. Explain an activity to show that sound is produced due to vibrations of a body. 2
26. Discuss the method of charging by induction. 2

**OR**

- Discuss the method of charging by Friction. 2

### Section-C

**Question No. 27 to 33 are short answer questions**

27. Write any three characteristics of an ideal fuel. 3
28. What is acid rain? How is it caused? Mention its harmful effects. 3

**OR**

- (a) Name any four sources of water pollution. 2  
(b) Name the chemical which is used for the purification of water. 1

29. Distinguish between Plant cell and animal cell. 3
30. (a) What would be the gender of the child developed from a zygote formed by the fusion of 2  
 (i) A sperm with Y chromosome fuses with an egg with X chromosome?  
 (ii) A sperm with X chromosome fuses with an egg with X chromosome?  
 (b) How many chromosomes are there in a human cell? 1
31. What is a Gold leaf electroscope? Explain the working of a Gold leaf electroscope with the help of diagram. 3
32. Define Dispersion. Draw a ray diagram to show dispersion of light through a glass prism. 3
33. What are artificial satellites? Mention their two applications 3

### **Section-D**

**Question No. 34 to 36 are long answer questions.**

34. Draw the labelled diagram of the candle flame. Identify and discuss the three main zones of the flame. 5

**OR**

Draw the labelled diagram of soda-acid fire extinguisher and explain in detail with suitable chemical reaction. 5

35. (a) Draw neat labelled diagram of Human Female reproductive system 2  
 (b) Mention the functions of ovaries and testes in the human reproductive system. 2  
 (c) How are oviparous animals different from viviparous animals? 1

**OR**

- (a) How does hydra reproduce asexually? Explain with a diagram. 2  
 (b) Explain binary fission in amoeba with a neat labelled diagram. 2  
 (c) What are the advantages of sexual reproduction over asexual reproduction 1

36. Define constellation. Which constellation is commonly known as Laghu Saptarishi Mandal in India? Explain the Orion constellation with the help of a diagram. 5

**OR**

What is a light year? How many kilometers make one light year? The distance between the Earth and the Sun is  $150 \times 10^6$  km. Express this distance in light years. 5

## 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.**

The changes which occur during adolescence in the human body are controlled by hormones. Hormones are secreted by glands called ductless glands or endocrine glands. The hormones are poured directly into the bloodstream. Endocrine glands include pituitary glands, thyroid gland, pancreas, and adrenal. The pituitary gland is also called the master gland because it controls the activities of other glands. 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. For example: Frogs, Butterfly etc. In frogs thyroxine hormones regulate metamorphosis. In insects, metamorphosis is controlled by insect hormones. When person is suffering from sugar problems, it means that his pancreas is not producing sufficient quantities of insulin hormone.

- (a) Which gland is also called the master gland and why? 1  
(b) Name the hormone that controls metamorphosis in frogs. 1  
(c) What is metamorphosis? 2

OR

- (c) What is the role of the pancreas in a diabetic patient? 2

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

Electrolysis is defined as a process of decomposing ionic compounds into their elements by passing a direct electric current through the compound in a fluid form. The cations are reduced at cathode and anions are oxidised at the anode. The main components that are required for conducting electrolysis are an electrolyte, electrodes, and some form of external power source is also needed. Electrolysis is usually done in a vessel named 'electrolytic cell' containing two electrodes (cathode and anode) connected to a direct current source and an electrolyte which is an ionic compound undergoing decomposition. In the process of electrolysis, there is an interchange of ions and atoms due to the addition or removal of electrons from the external circuit. Basically, on passing current, cations move to the cathode, take electrons from the cathode (given by the supply source-battery), and is discharged into the neutral atom. The neutral atom, if solid, is deposited on the cathode and if gas, move upwards. This is a reduction process and the cation is, reduced at the cathode. At the same time anions, give up their extra electrons to the anode and is oxidised to neutral atoms at the anode. Electrons released by the anions travel across the electrical circuit and reach the cathode completing the circuit. Electrolysis involves a simultaneous oxidation reaction at anode and a reduction reaction at the cathode.

- (a) Which most commonly used liquid is decomposed by the process of electrolysis? 1  
(i) Petrol (ii) Diesel (iii) Water (iv) Milk
- (b) Which of the following process is based on the principles of electrolysis? 1  
(i) Rusting (ii) Electroplating (iii) Colour change of electrolyte (iv) None of the above
- (c) \_\_\_\_\_ is a compound which in aqueous solution that allows an electric current to pass through it while \_\_\_\_\_ are the metal rods which are dipped in electrolyte and attached to external power source. 2  
(i) Electrode, electrolyte (ii) Anode, cathode  
(iii) Solution, electric plate (iv) Electrolyte, electrode

OR

- (c) Draw an electrolytic cell.

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

If a beam of light is incident on a smooth and highly polished surface, the rays of light remain parallel even after reflection as they strike the surface at the same angle of incidence. Thus, their angles of reflection will also remain the same. Therefore, they will move along the same direction and form a parallel beam. Such a type of reflection in which the parallel rays of light remain parallel after reflection is called regular reflection. If a beam of parallel rays of light falls on a rough surface, the rays of light do not remain parallel after reflection from the surface. The rays of light get scattered in different directions, as they strike the surface at different angles of incidence. Therefore, they will move in different directions and do not form a parallel beam. Such a type of reflection in which the parallel rays of incident light do not remain parallel after reflection is called irregular Reflection.

- (a) What is reflection of light? 1
- (b) Define Diffused Reflection. 1
- (c) If the angle between the incident ray and the reflected ray is  $90^\circ$ . Calculate the angle of reflection and the angle of incidence. 2

**OR**

- (c) If the angle between the incident ray and the Plane mirror is  $30^\circ$ . Calculate the angle of reflection and the angle of incidence. 2

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