

**Common Quarterly Exam Answer Key – 2024-2025**Subject: SCIENCE Class: 10<sup>th</sup> STD E/M

Prepared by: N.R.RIZWAN AHMED, B.T. Asst in Science

**PART – I Choose the Best answer:**

1. d) both and c	5. a) $6.023 \times 10^{23}$	9. b) 33 Segment
2. b) Infinity	6. a) 17 <sup>th</sup>	10. a) Medulla oblongata
3. a) X or -X	7. c) Water	11. a) Pancreases
4. c) Ohm	8. c) Conjoint	12. c) Graffian follicle

**PART- II – Answer the following: (2Marks)**

13. The inherent property of a body to resist any change in its state of rest or the uniform motion, unless it is influenced upon by an external unbalanced force is known as inertia.

1. Inertia of rest 2. Inertia of motion 3. Inertia of direction

14. The ability of the eye lens to focus nearby as well as the distant object is called Power of accommodation of the eye. Changing the focal length of the eye lens the helps of ciliary muscles.

15. The number of atoms present in the molecule is called atomicity. E.g.: Atomicity of phosphorus – 4, Atomicity of HCl-2

16. (a) FALSE - **two** component are called Binary solution.

(b) FALSE – Moseley's periodic table is based on atomic number.

$$17. RQ = \frac{\text{volume of } CO_2 \text{ librated}}{\text{Volume of } O_2 \text{ consumed}}$$

18. The frequency of impulse generation is maximum in case of Sino atrial node in comparison to other part of pathway. Hence it **guide the rhythm of heart beat.**

19. (a) Nissil's granules – cyton  
 (b) Hypothalamus – Forebrain  
 (c) Cerebellum – Hindbrain  
 (d) Schwann cell – Peripheral Nervous system

20. A. Exine B. Intine  
 C. Generative cell D. Vegetative nucleus.

21. During the replication of DNA molecule, the new strand is synthesized in **short segments** which are called Okazaki fragments. These fragments are joined together by the enzyme **DNA ligase.**

22. Solution: Charge (Q) = 12, Time (t) = 5 sec

$$\text{Current } I = \frac{Q}{t} = \frac{12}{5} = 2.4 \text{ A}$$

**PART – III – Answer the Following: (4 Marks)**

23. i. Light is a form of energy.  
 ii. Travels along a straight line  
 iii. Does not need any medium  
 iv. Different colored light has different wave length  
 v. Lowest wave length – violet, highest wave length – red

**24. (a)**

Ideal Gas	Real Gas
If the atoms or molecules of a gas do not interact with each other, then it is called ideal gas.	If the molecules or atoms of a gases interact with each other then it is called real gas.
At low pressure or high temperature the interatomic or intermolecular forces of attraction are weak.	At very high temperature or low pressure, a real gas behaves as an ideal gas because of the lack of inter atomic or intermolecular forces of attraction.

(b) At constant temperature, the steady current flowing through a conductor is directly proportional to the potential difference between two ends of the conductor.

$$\text{Or } V = I R$$

25. (a) A – Silvery white metal - Aluminium  
 B - Aluminium Oxide

(b) A solution consisting of two components, a solute and a solvent is called binary solution.

$$\text{Solute + Solvent = Binary Solution}$$

26. i) Blood is sucked by pharynx.  
 ii) Blood is stored in the crop.  
 iii) The three jaws inside the mouth, causes a painless Y-Shaped wound in the skin of the host.  
 iv) Hirudin which does not allow the blood to coagulate.  
 v) Thus, continues supply of the blood is maintained.

27. i) Transpiration is the evaporation of water in plants through stomata in the leaves.

ii) Supplies water for photosynthesis and cools the surface of the leaves.

- iii) Transports minerals from soil to all parts of the plant.  
 iv) Cool the surface of the leaves by evaporation.  
 v) Keeps the cell turgid, hence maintains their shape.

**28. (a)**

(i) Gibberellins on plants stimulate **elongation of internode. Eg: Corn**

ii) Treatment of rosette plants with gibberellin induces **sudden shoot elongation** followed by flowering. This is called **Bolting.**

(b) The chemical messengers are known as hormones which are produced by specialized glands.

Physiological process such as digestion, metabolism, growth, development and reproduction are controlled by hormones. **Eg:- Growth hormone.**

**29. (a) Triple Fusion:**

One sperm fuses with the egg and forms a diploid zygote.

The other sperm fuses with secondary nucleus to form triploid endosperm. This is called triple fusion.

(b) Vas deferens, seminal vesicle and penis.

30. (a) Allosomes are chromosomes which are responsible for determining the sex of an individual.

They are also called as sex chromosomes or hetrochromosomes. The 23<sup>rd</sup> chromosomes of human beings is an allosome.

(b) if both A and R are true and R ia the correct explanation of A.

31. (a) Ventricles have thicker walls than auricles because, they have to pump blood to different organs and the pressure with which the blood flows through them is more than the auricles.

(b) CNS – Central Nervous System

$$32. (a) H_2O = (2 \times 1) + (1 \times 16) = 2 + 16 = 18$$

(b) **Negative , Positive**

**PART IV – Answer the following: (7 Marks)****33. (a) (i)**

- Propulsion of rockets is based on the law of conservation of linear momentum and Newton's third law of motion.
- Rockets are filled with a fuel in the propellant tank.
- The mass of the rocket decreases with altitude.
- According to the law of conservation of linear momentum decrease in mass, increases the velocity.
- There is no net external force acting on it, the linear momentum of the system is conserved.

**(ii)**

Convex Lens	Concave Lens
1. Converging lens	1. Diverging lens
2. Produce real image	2. Produce Virtual image
3. Convex lens is thicker in middle	3. Convex lens is thinner in middle
4. it is used to treat hypermetropia.	4. it is used to treat Metropia.

OR

**33. (b)**

**(i) Boyle's Law:** At constant temperature the volume of a fixed mass of gas is inversely proportional to its pressure.

$$P \propto \frac{1}{v}$$

**(ii)** The blue colour with shorter focal length scatters to a greater extent causes the sky to appear in blue colour.

**(iii) Electric current** is the rate of flow of charges in a conductor.

**(iv) LED – Light Emitting Diode**

**34.(a) (i)** 1. An atom is no longer indivisible.

2. Atom is a smallest particle that takes part in a chemical reaction.

3. The mass of an atom can be converted into energy  
( $E = mc^2$ ).

4. Atoms of the same element may have different atomic mass.

E.g: **isotopes**  $_{17}\text{Cl}^{35}$ ,  $_{17}\text{Cl}^{37}$ 

5. Atoms of different element may have same atomic masses.

E.g: **isobars**  $_{18}\text{Ar}^{40}$ ,  $_{20}\text{Ca}^{40}$ **(ii)** Concentrated Nitric Acid ( $\text{HNO}_3$ ) because its thin layer.

OR

**34.(b) (i)** a) Moist air b) presence of Water c) presence of  $\text{O}_2$   
**(ii)**

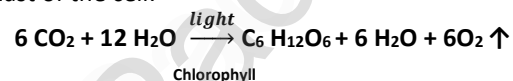
Hygroscopic Substances	Deliquescent Substances
1. They absorb moisture and Do not dissolve.	1. They absorb moisture and dissolve.
2. They do not change its Physical state on exposure to air.	2. They change their physical state on exposure to air.
3. They may be amorphous solids or liquid	3. They are crystalline solids
4. They are used as drying agents.	4. They dissolved in water forming saturated solution.
5. Eg: Quick lime, silica gel	5. E.g: Caustic soda, Caustic potash

**(iii)**

Hygroscopic	Deliquescent
Con Sulphuric Acid	Copper Sulphate Penta Hydrate
Silica Gel	Calcium Chloride

**35. (a)**

**(i)** Green plants to synthesize their own food by using chlorophyll and sunlight is called Photosynthesis. It takes place in the chloroplast of the cell.

**(ii)**

Aerobic respiration	Anaerobic respiration
Aerobic respiration is type of cellular respiration that takes place with the help of Oxygen.	Aerobic respiration takes place without Oxygen.
Carbon-di-oxide, water and ATP are formed.	Carbon-di-oxide, ethanol and ATP are formed.
$\text{C}_6 \text{H}_{12}\text{O}_6 + 6 \text{CO}_2 + 6 \text{H}_2\text{O} + \text{ATP}$	$\text{C}_6 \text{H}_{12}\text{O}_6 + 2 \text{CO}_2 + 2 \text{C}_2\text{H}_5\text{OH} + \text{Energy}$

**(iii)** In rabbit the teeth are of different types, milk teeth and permanent teeth. Hence, the dentition is called "Heterodont".

**(iv) Thyroxin** is called as Personality Hormones.

OR

**35. (b) (i) Function of Blood:**

- i) Transport of respiratory gases (Oxygen and  $\text{CO}_2$ ).
- ii) Transport of hormones.
- iii) It maintains proper water balance in the body.
- iv) Transport of Digested food material to the different body cells.
- v) It is involved in protection of the body and defense against diseases.

**(ii) Parts of the Hind Brain:**

- i) Cerebellum
- ii) Pons
- iii) Medulla oblongata

**(iii) Bolting:**

The sudden shoot elongation of a plant followed by flowering is called bolting.

It can be induced artificially by the treatment of gibberellin on rosette plant.

**(iv) World Menstrual Hygiene Day observed is May 28.**

**Prepared by**  
**N.R. Rizwan Ahmed** M.Sc., M.Phil., B.Ed.,  
**(B.T Assistant in Science)**  
**Mazharul Uloom Hr. Sec. School, Ambur.**