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10TH STD SCIENCE

QUARTERLY EXAM MODEL QUESTION PAPER (1) – 2026 & 27

### PART – I

Answer all the questions.

(12 × 1 = 12)

- The unit of 'g' is  $\text{m s}^{-2}$ . It can be also expressed as  
a)  $\text{cm s}^{-1}$     b)  $\text{Nkg}^{-1}$     c)  $\text{Nm}^2\text{kg}^{-1}$     d)  $\text{cm}^2\text{s}^{-2}$
- Which of the following lens would you prefer to use while reading small letters found in a dictionary?  
a) A convex lens of focal length 5 cm    b) A concave lens of focal length 5 cm  
c) A convex lens of focal length 10 cm    d) A concave lens of focal length 10 cm
- If a substance is heated or cooled, the linear expansion occurs along the axis of  
a) X or -X    b) Y or -Y    c) both (a) and (b)    d) (a) or (b)
- In a simple circuit, why does the bulb glow when you close the switch?  
a) The switch produces electricity.    b) Closing the switch completes the circuit.  
c) Closing the switch breaks the circuit.    d) The bulb is getting charged.
- Which of the following is a triatomic molecule?  
a) Glucose    b) Helium    c) Carbon dioxide    d) Hydrogen
- Which of the following have inert gases 2 electrons in the outermost shell.  
a) He    b) Ne    c) Ar    d) Kr
- The xylem and phloem arranged side by side on same radius is called  
a) radial    b) amphivasal    c) conjoint    d) None of these
- The brain of leech lies above the  
a) Mouth    b) Buccal Cavity    c) Pharynx    d) Crop
- Which of the following process requires energy?  
a) active transport    b) diffusion    c) osmosis    d) all of them
- The neurons which carries impulse from the central nervous system to the muscle fibre.  
a) afferent neurons    b) association neuron    c) efferent neuron    d) unipolar neuron
- Which one of the following hormones is naturally not found in plants:  
a) 2, 4-D    b) GA3    c) Gibberellin    d) IAA.
- Which one of the following is an IUCD?  
a) Copper - T    b) Oral pills    c) Diaphragm    d) Tubectomy

### PART - II

Answer any seven questions. Question No.22 is compulsory.

(7 X 2 = 14)

- Why a spanner with a long handle is preferred to tighten screws in heavy vehicles?
- Why does the sky appear in blue colour?
- Give any two examples for heterodiatomic molecules.
- What is rust? Give the equation for formation of rust.
- Define Hydrated salt.
- Identify the parts A, B, C, D in the given figure. (figure name – Human adrenal gland)  
(Image shows a diagram pointing to A, B, C, D)
- How does leech suck blood from the host?
- Differentiate between systemic circulation and pulmonary circulation.
- What are Allosomes?
- Calculate the current and the resistance of a 100W, 200 V electric bulb in an electric circuit.

### PART – III

Answer any seven questions. Question No. 32 is compulsory.

(7 x 4 = 28)

- What are the types of inertia? Give an example for each type.
- List any five properties of light
- Derive the ideal gas equation.
- (i) Match the following:  
1. Blue vitriol -  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$   
2. Gypsum – CaO  
3. Deliquescence –  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$   
4. Hygroscopic - NaOH  
(ii) Fill in the blanks:  
(a) Example for liquid in solid type solution is \_\_\_\_\_.  
(b) Volume percentage decreases with increases in temperature because \_\_\_\_\_
- Differentiate Aerobic and Anaerobic respiration.
- How does locomotion take place in leech?
- Write the physiological effects of gibberellins.
- Enumerate the functions of blood.
- (i) Define reflex arc.  
(ii) Name the parts of the hind brain.
- Calculate the % relative abundance of B-10 and B-11, if its average atomic mass is 10.804 amu.

### PART - IV

Answer all the questions. Draw diagrams wherever necessary.

(3 X 7 = 21)

- (a) (i) State Joule's law of heating.  
(ii) An alloy of nickel and chromium is used as the heating element. Why?  
(iii) How does a fuse wire protect electrical appliances?

(OR)

- (i) State the universal law of gravitation and derive its mathematical expression.  
(ii) State Rayleigh's law of scattering.

34. (a) (i) Give the salient features of "Modern atomic theory".

(ii) What is an amalgam? Give an example for it.

(OR)

(b) (i) Write notes on various factors affecting solubility.

(ii) What is mean by binary solution.

35. (a) (i) Write the events involved in the sexual reproduction of a flowering plant.

(ii) Discuss the first event and write the types.

(iii) Mention the advantages and the disadvantages of that event.

(OR)

(b) (i) How is the structure of DNA organised?

(ii) What is the biological significance of DNA?

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10TH STD SCIENCE

QUARTERLY EXAM MODEL QUESTION PAPER (2) – 2026 & 27

### PART – I

Answer all the questions.

(12 × 1 = 12)

1. The unit of 'g' is  $\text{m s}^{-2}$ . It can be also expressed as

- a)  $\text{cm s}^{-1}$       b)  $\text{N kg}^{-1}$       c)  $\text{Nm}^2\text{kg}^{-1}$       d)  $\text{cm}^2\text{s}^{-2}$

2. The eye defect 'Presbyopia' can be corrected by .....

- a) Convex lens      b) Concave lens      c) Concave mirror      d) Bi focal lenses

3. Which of the following is a triatomic molecule?

- a) Glucose      b) Helium      c) Carbon-di-oxide      d) Hydrogen

4. In a simple circuit, why does the bulb glow when you close the switch?

- a) The switch produces electricity.      b) Closing the switch completes the circuit.  
c) Closing the switch breaks the circuit.      d) The bulb is getting charged.

5. Which of the following is a triatomic molecule?

- a) Glucose      b) Helium      c) Carbon dioxide      d) Hydrogen

6. Electron affinity of Noble gases is .....

- a) Two      b) One      c) Zero      d) None of the above

7) Node of Ranvier is found in.....

- a) muscles      b) axons      c) dendrites      d) cyton

8) The brain of leech lies above the

- a) Mouth      b) Buccal Cavity      c) Pharynx      d) Crop

9) Which of the following process requires energy?

- a) active transport      b) diffusion      c) osmosis      d) all of them

10) The neurons which carries impulse from the central nervous system to the muscle fibre.

- a) afferent neurons      b) association neuron      c) efferent neuron      d) unipolar neuron

11) The body of leech has.....

- a) 23 segments      b) 33 segments      c) 38 segments      d) 30 segments

12) Which one of the following is an IUCD?

- a) Copper - T      b) Oral pills      c) Diaphragm      d) Tubectomy

**PART – II****II Answer Any Seven of the following. Question No. 22 is compulsory****(7 x 2 = 14)**

13. State Newton's second law.
14. Why does the sky appear in blue colour?
15. Write the different types of isotopes of oxygen and its percentage abundance.
16. What is rust? Give the equation for formation of rust.
17. The aquatic animals live more in cold region. why?
18. Draw and Label the given parts. (Figure name - chloroplast)
19. How is diastema formed in rabbit?
20. Define reflex arc.
21. Why are thyroid hormones referred as personality hormone?
22. A container whose capacity is 70 ml is filled with a liquid up to 50 ml. The liquid in the container is heated the level of the liquid falls 48.5ml. Then we heat more, the level of the liquid rises to 51.2ml. Find the apparent and real expansion.

**PART – III****III Answer Any Seven of the following. Question No. 32 is compulsory****(7 x 4 = 28)**

23. (i) Differentiate mass and weight.
- (ii) Two bodies have a mass ratio of 3:4. The force applied on the bigger mass produces an acceleration of  $12 \text{ ms}^{-2}$ , what could be the acceleration of the other body, if the same force acts on it.
24. List any five properties of light.
25. Distinguish between linear, areal and superficial expansion.
26. 'A' is a silvery white metal. 'A' combines with  $\text{O}_2$  to form 'B' at  $800^\circ\text{C}$ , the alloy of 'A' is used in making the aircraft. Find 'A' and 'B'.
27. In what way hygroscopic substances differ from deliquescent substances.
28. What is transpiration? Give the importance of transpiration.
29. List out the parasitic adaptations in leech.
30. With a neat labelled diagram. Explain the structure of a neuron.
31. a) Name the gaseous plant hormone. Describe its three different actions in plants.
- b) Which hormone is known as stress hormone in plants? why?
32. Calculate the percentage of S in  $\text{H}_2\text{SO}_4$ .

**PART – IV****IV Answer the following in detail.****(3 x 7 = 21)**

- 33.a) i) State the universal law of gravitation and derive its mathematical expression.
  - ii) Give any 2 applications of universal law of gravitation.
- (OR)**
- b) i) Differentiate Convex lens and Concave lens.
  - ii) State Joule's law of heating.
  - iii) List the merits of LED bulb.
- 34.a) i) Write any two uses of Aluminium. Calcium Carbonate is decomposed on heating in the following reaction:  $\text{CaCO}_3 \longrightarrow \text{CaO} + \text{CO}_2$
  - ii) How many moles of Calcium Carbonate are involved in this reaction?
  - iii) Calculate the gram molecular mass of calcium carbonate involved in this reaction.

- iv) How many moles of  $\text{CO}_2$  are there in this equation?

**(OR)**

- b) Write notes on various factors affecting solubility.

35.a) Describe and name three stages of cellular respiration that aerobic organisms use to obtain energy from glucose.

**(OR)**

- b) i) Enumerate the function of blood.

- ii) Why is the sinoatrial node called the pacemaker of heart?

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QUARTERLY EXAM MODEL QUESTION PAPER (3) – 2026 & 27

### PART – I

Answer all the questions.

(12 × 1 = 12)

- Newton's III law is applicable
  - for a body is at rest
  - for a body in motion
  - both a & b
  - only for bodies with equal masses
- Magnification of a convex lens is
  - positive
  - negative
  - either positive or negative
  - zero
- If a substance is heated or cooled, the change in mass of that substance is
  - positive
  - negative
  - zero
  - none of the above
- 1 mole of any substance contains ..... molecules.
  - $6.023 \times 10^{23}$
  - $6.023 \times 10^{-23}$
  - $3.0115 \times 10^{23}$
  - $12.046 \times 10^{23}$
- Which of the following is a triatomic molecule?
  - Glucose
  - Helium
  - Carbon dioxide
  - Hydrogen
- Electron affinity of Noble gases is .....
  - Two
  - One
  - Zero
  - None of the above
- Node of Ranvier is found in .....
  - muscles
  - axons
  - dendrites
  - cyton
- Water which is absorbed by roots is transported to aerial parts of the plant through
  - cortex
  - epidermis
  - phloem
  - xylem
- The part of human brain which acts as relay center is .....
  - thalamus
  - hypothalamus
  - corpus callosum
  - pons
- Identify the exocrine gland
  - pituitary gland
  - Adrenal gland
  - Salivary gland
  - Thyroid gland
- Syngamy results in the formation of .....
  - Zoospores
  - Conidia
  - Zygote
  - Chlamydo spores
- ..... is caused by the mutation of a single gene.
  - Carcinoma
  - Sickle cell anemia
  - Leukemia
  - Lymphoma

### PART – II

II Answer Any Seven of the following. Question No. 22 is compulsory

(7 × 2 = 14)

- why does the sky appear in blue colour?
- State Ohm's Law.
- Define Atomicity.
- what is meant by binary solution?
- what is respiratory quotient?
- Fill in the blanks:
  - Normal blood pressure is \_\_\_\_\_
  - A neuron contains all cell organelles except \_\_\_\_\_
- Draw the diagram and label the Parts A, B, C and D. (Figure name - Thyroid gland)
- Define reflex arc.
- Why are thyroid hormones referred as personality hormone?
- Calculate the resistance of a conductor through which a Current of 2 A passes, when the potential difference between its ends is 30V.

### PART – III

III Answer Any Seven of the following. Question No. 32 is compulsory

(7 × 4 = 28)

- List any five properties of light.
- Derive the ideal gas equation.
- State newton's Law of motion.
- Give the salient features of "modern atomic theory".
- In what way hygroscopic substances differ from deliquescent substances.
- Write a short note on mesophyll.
- How nerve impulses are transferred from one neuron to next neuron?
- write the physiological effects of gibberellins.
- why did mendel select pea plant for his experiments?
- A solution was prepared by dissolving 25g of sugar in 100g of water. Calculate the mass percentage of solute.

### PART – IV

IV Answer the following in detail.

(3 × 7 = 21)

- State the Universal law of gravitation and derive its mathematical expression.
- what are the uses of convex lens?

(OR)

- what is meant by electric Current?
- which instrument is used to measure the electric current?
- state Joule's law of heating.
- How does a fuse wire protect electrical appliances?

34. a) i) The electronic configuration of metal A is 2,8,18,1. The metal A when exposed to air and moisture forms B a green layered compound. A with Conc.  $H_2SO_4$  forms C and D along with water. D is a gaseous compound. Find A, B, C and D.

- State two conditions necessary for rusting of iron.

(OR)

- Define the term solution.

ii) Write notes on various factors affecting solubility.

35. a) i) Differentiate between systole and diastole.

ii) Explain the conduction of heart beat.

(OR)

b) i) what are the phases of menstrual cycle? Indicate the changes in the ovary and uterus.

ii) what are Okazaki fragments?

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QUARTERLY EXAM MODEL QUESTION PAPER (4) – 2026 & 27

### PART – I

Answer all the questions.

(12 × 1 = 12)

- Impulse is equal to .....  
a) rate of change of momentum b) rate of force and time  
c) change of momentum d) rate of change of mass
- SI Unit of resistance is .....  
a) mho b) joule c) ohm d) ohm
- If a substance is heated or cooled, the change in mass of that substance is  
a) positive b) negative c) zero d) none of the above
- 1 mole of any substance contains ..... molecules.  
a)  $6.023 \times 10^{23}$  b)  $6.023 \times 10^{-23}$  c)  $3.0115 \times 10^{23}$  d)  $12.046 \times 10^{23}$
- ..... is an important metal to form amalgam.  
a) Ag b) Hg c) Mg d) Al
- Solubility of NaCl in 100 ml water is 36g. If 25 g of salt is dissolved in 100 ml of water how much more salt is required for saturation .....  
a) 12g b) 11g c) 16g d) 20 g
- Which is formed during anaerobic respiration  
a) Carbohydrate b) Ethyl alcohol c) Acetyl CoA d) Pyruvate
- Water which is absorbed by roots is transported to aerial parts of the plant through  
a) cortex b) epidermis c) phloem d) xylem
- The part of human brain which acts as relay center is .....  
a) thalamus b) hypothalamus c) corpus callosum d) pons
- The part of human brain which acts as relay center is .....  
a) thalamus b) hypothalamus c) corpus callosum d) pons
- Identify the exocrine gland  
a) pituitary gland b) Adrenal gland c) Salivary gland d) Thyroid gland
- Syngamy results in the formation of .....  
a) Zoospores b) Conidia c) Zygote d) Chlamydo spores

**PART – II****II Answer Any Seven of the following. Question No. 22 is compulsory****(7 x 2 = 14)**

13. Define dispersion of light.
14. State Boyle's law.
15. Mark the correct choice: Assertion (A): Electric appliances with a metallic body have three wire connections. Reason (R): Three pin connections reduce heating of the connecting wire.
  - A) Both (A) and (R) are true
  - B) Both (A) and (R) are false
  - C) (A) is true. But (R) is false
  - D) (A) is false. But (R) is true.
16. State two conditions necessary for rusting of iron.
17. Leeches do not have an elaborate secretion of digestive juices and enzymes - why?
18. What is cohesion?
19. Define reflex arc.
20. Fill in the blanks:
  - i) ..... causes stomatal closure.
  - ii) In the islets of Langerhans, beta cells secrete .....
21. Identify the parts A, B, C, and D. (Figure name - Pollen Grain)
22. A solution was prepared by dissolving 25g of sugar in 100g of water. Calculate the mass percentage of solute.

**PART – III****III Answer Any Seven of the following. Question No. 32 is compulsory****(7 x 4 = 28)**

23. i) Define one calorie.
- ii) Distinguish between ideal gas and real gas.
24. i) State Joule's law of heating.
- ii) Match:
  - a) electric current - Volt
  - b) potential difference - Joule
  - c) electrical power - ampere
  - d) electrical energy - Watt
25. i) Give any two examples for heterodiatomic molecules.
- ii) What is the molar volume of a gas?
26. i) List any 4 periodicity properties found in the periodic table.
- ii) True or False. If false, give the correct statement.
  - a) Ionic radius increases across the period from left to right.
  - b) An alloy is a heterogeneous mixture of metals.
27. Differentiate monocot root and dicot root.
28. i) Name the parts of the hindbrain.
- ii) Match.
  - a) Nissl's granules - Forebrain
  - b) Hypothalamus - Peripheral Nervous System

- c) Cerebellum - cyton
- d) Schwann cell - Hindbrain

29. i) Which hormone is secreted during an emergency situation in man?
- ii) What is bolting? How can it be induced artificially?
30. What are the phases of the menstrual cycle? Indicate the changes in the uterus.

31. i) What are Okazaki fragments?

- ii) What are allosomes?

32. A person with myopia can see objects placed at a distance of 4m. If he wants to see objects at a distance of 20m, what should be the focal length and power of the concave lens he must wear?

**PART – IV****IV Answer the following in detail.****(3 x 7 = 21)**

33. A) State and prove the law of conservation of linear momentum.

**(OR)**

- B) i) What connection is used in domestic appliances?
- ii) Name any two devices which are working on the heating effect of electric current.
- iii) List the merits of LED bulbs.

34. A) i) Calculate the % of each element in calcium carbonate. (Atomic mass: C-12, O-16, Ca-40)

- ii) What are the applications of Avogadro's law?

**(OR)**

- B) i) What happens when  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$  is heated? Write the equation.
- ii) In what way do hygroscopic substances differ from deliquescent substances?

35. A) i) Write the events involved in the sexual reproduction of a flowering plant.

- ii) Write the types of the first event.

- iii) Write the physiological effects of gibberellins.

**(OR)**

- B) i) Draw a neat labeled diagram of a neuron.

- ii) Enumerate the functions of blood.



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QUARTERLY EXAM MODEL QUESTION PAPER (5) – 2026 & 27

### PART – I

(12 × 1 = 12)

Answer all the questions.

- The basis of modern periodic law is .....  
a) atomic number    b) atomic mass    c) Isotopic mass    d) number of neutrons.
- Solubility of sodium chloride in water at 25°C is  
a) 25 g    b) 36 g    c) 48 g    d) 80 g
- Casparian Strips are present in the ..... of the root.  
a) Cortex    b) pith    c) Pericycle    d) Endodermis
- 'Heart of heart' is called.....  
a) SA node    b) AV node    c) Purkinje fibres    d) Bundle of His
- Which hormone is known as 'Time messenger'?  
a) Thyroid    b) Pituitary    c) Oxytocin    d) Melatonin
- Asexual reproduction takes place through budding in  
a) Amoeba    b) Yeast    c) Plasmodium    d) Bacteria
- The number of chromosomes found in human beings are .....  
a) 46    b) 22 pairs    c) 44    d) (b) and (c) 5. .... is an important metal to form amalgam.  
a) Ag    b) Hg    c) Mg    d) Al
- Solubility of NaCl in 100 ml water is 36g. If 25 g of salt is dissolved in 100 ml of water how much more salt is required for saturation .....  
a) 12g    b) 11g    c) 16g    d) 20 g
- Which is formed during anaerobic respiration  
a) Carbohydrate    b) Ethyl alcohol    c) Acetyl CoA    d) Pyruvate
- Water which is absorbed by roots is transported to aerial parts of the plant through  
a) cortex    b) epidermis    c) phloem    d) xylem
- The part of human brain which acts as relay center is .....  
a) thalamus    b) hypothalamus    c) corpus callosum    d) pons
- The part of human brain which acts as relay center is .....  
a) thalamus    b) hypothalamus    c) corpus callosum    d) pons

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**PART – II****II Answer Any Seven of the following. Question No. 22 is compulsory****(7 x 2 = 14)**

13. Classify the types of force based on their application.

14. Define dispersion of light.

15. Define one calorie.

16. True or False: (If false give the correct statement)

i) Moseley's periodic table is based on atomic mass.

ii) An alloy is a heterogeneous mixture of metals.

17. Match the following:

a) Blue vitriol -  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ b) Gypsum -  $\text{CaO}$ c) Deliquescence -  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ d) Hygroscopic -  $\text{NaOH}$ 

18. What is photosynthesis and where in a cell does it occur?

19. i) Give the common name of the Hirudinaria granulosa.

ii) Write the dental formula of rabbit.

20. What are synthetic auxins? Give examples.

21. Identify the parts A, B, C and D. (Figure name - Sperm)

22. Calculate the resistance of a conductor through which a current of 2A passes, when the potential difference between its ends is 30V.

**PART – III****III Answer Any Seven of the following. Question No. 32 is compulsory****(7 x 4 = 28)**

23. a) State Newton's second law.

b) Why are traffic signals red in colour?

24. a) Distinguish between ideal gas and real gas.

b) Distinguish between the resistivity and conductivity of a conductor.

25. a) Define : Atomicity.

b) What is an amalgam? Give an example.

26. Write notes on i) Saturated solution

ii) Unsaturated solution

27. Differentiate between Monocot root and Dicot root.

28. List out the parasitic adaptations in leech.

29. Classify neurons based on their structure.

30. Write the physiological effects of gibberellins.

31. a) Why did Mendel select pea plant for his experiments?

b) Why is polyploidy considered to be advantageous to both plants and animals?

32. 'A' is a cylindrical structure that begins from the lower end of medulla and extends downwards. It is enclosed in bony cage 'B' and covered by membranes 'C'. As many as 'D' pairs of nerves arise from the structure 'A'.

i) What is A?

ii) Name (a) bony cage 'B' and (b) membranes 'C'

iii) How many are D?

**PART – IV****IV Answer the following in detail.****(3 x 7 = 21)**

33. A) i) What are the types of inertia? Give an example for each type.

ii) State Avogadro's law.

**(OR)**

B) i) Differentiate the eye defects: Myopia and Hypermetropia.

ii) Write the symbol for the following component.

a) ground connection

b) resistor

c) light emitting diode

d) A diode

34. A) i) Give the salient features of "Modern atomic theory"

ii) Calculate the percentage of sulphur in  $\text{H}_2\text{SO}_4$ .**(OR)**

B) i) Write notes on various factors affecting solubility?

ii) What is rust? Give the equation for formation of rust?

35. A) i) Differentiate between systole and diastole. Explain the conduction of heart beat.

ii) How does leech suck blood from the host?

**(OR)**

B) i) Write the events involved in the sexual reproduction of a flowering plant.

a) Discuss the first event and write the types.

b) Mention the advantages and the disadvantages of that event.

ii) What are Okazaki fragments?

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