

QB365 Question Bank School

Half Yearly Model Question - 2023

10th Standard

Science

Total Marks : 75

PART -A

12 x 1 = 12

Answer The All Questions :

1) Which of the following represents a precipitation reaction?

- (a) $A_{(s)} + B_{(s)} \rightarrow C_{(s)} + D_{(s)}$ (b) $A_{(s)} + B_{(aq)} \rightarrow C_{(aq)} + D_{(l)}$ (c) $A_{(aq)} + B_{(aq)} \rightarrow C_{(s)} + D_{(aq)}$
(d) $A_{(aq)} + B_{(s)} \rightarrow C_{(aq)} + D_{(l)}$

2) 'Heart to Heart' is called

- (a) SA node (b) AV node (c) Purkinje fibres (d) Bundle of His

3) The weight of an object in a satellite orbiting around the earth is

- (a) zero (b) actual weight (c) less than the actual weight (d) greater than the actual weight

4) The scattering of light by colloidal particles is _____ scattering.

- (a) Ray light (b) Mie (c) Raman (d) Tyndall

5) Kilowatt - hour is the unit of

- (a) Power (b) Potential difference (c) Force (d) Electrical energy

6) U^{238} kept in nuclear reactors, generally decay into _____.

- (a) Np^{239} (b) PU^{239} (c) both (a) and (b) (d) U^{235}

7) Technecium with atomic number _____.

- (a) 40 (b) 43 (c) 67 (d) 50

8) Fourth and fifth period called as _____ period.

- (a) short (b) shortest (c) longer (d) longest

9) 8% of NaCl solution is

- (a) 8g of NaCl in 100g of water (b) 8g of NaCl in 92g of water (c) 92g of NaCl in 8g of water
(d) 92g of NaCl in 100g of water

10) Power house of the cell is

- (a) Mitochondria (b) Leucoplast (c) Chromoplast (d) Chloroplast

11) The fertilized egg becomes implanted in about _____ after fertilization

- (a) 5-7days (b) 5-6days (c) 6 - 7 days (d) 5 - 8 days

12) Example for non-renewable energy resource _____

- (a) Biofuel (b) Nuclear power (c) Hydroelectric energy (d) Geothermal energy

PART - B

7 x 2 = 14

Answer The All Questions :

13) Distinguish between ideal gas and real gas.

Answer :

S.NO	IDEAL GAS	REAL GAS
i)	If the atoms or molecules of a gas do not interact with each other, then the gas is said to be an ideal gas or a perfect gas.	If the molecules or atoms of a gas interact with each other with a definite amount of intermolecular or interatomic force of attraction, then the gases are said to be a real gases.

14) Describe the activity about inertia of rest.

Answer : Take a glass tumbler and place a small card board on it. Now keep a coin at the centre of the card board. Then flick the card board quickly. The inertia of the coin keeps it in the state of the rest when the card board moves, and so the coin falls into the tumbler due to gravity. This happen due to inertia of rest.

15) Define Relative Molecular Mass.

Answer : The Relative Molecular Mass of a molecule is the ratio between the mass of one molecule of the substance to 1/12th mass of an atom of Carbon-12.

16) Define Soft soap.

Answer : Soaps which are prepared by the saponification of oils or fats with potassium salts are Known as soft soaps. They are used for cleansing the body.

17) What is a neurotransmitter?

Answer : Neurotransmitters are the chemicals which allow the transmission of nerve impulse from the axon terminal of one neuron to the dendron of another neuron or to an effector organ. eg. Acetylholine.

18) What is Satellite ?

Answer : An elongated knob-like appendage present at one end of the some chromosomes is known as satellite. The chromosomes with satellites are called as the sat-chromosomes.

19) What are the sources of e-wastes

Answer : (i) **Electronic devices:** Computers, laptops, mobile phones, printers, monitors, televisions, DVD players, calculators, toys, sport equipments

(ii) **Household electrical appliances:** Refrigerators, Washing machine, Microwave oven, mixer grinder, water heater.

(iii) **Accessories:** Printing cartridges, batteries and chargers

PART - C

7 x 4 = 28

Answer The All Questions :

20) Differentiate the eye defects: Myopia and Hypermeteropia.

Answer :

S.NO	MYOPIA	HYPERMETEROPIA
(i)	It is also known as Short sightedness.	It is also known as Long sightedness.
(ii)	It occurs due to the lengthening of eye ball.	It occurs due to the shortening of eye ball.
(iii)	With this defect near by objects can be seen clearly, but distant objects cannot be seen clearly.	With this defect nearby objects cannot be seen clearly but distant objects can be seen clearly.
(iv)	The focal length of eye lens is reduced.	The focal length of eye lens is increased.
(v)	The far point will not be infinity for such eyes and the far points have come closer.	The near point will not be at 25 cm for such eyes and the near point have moved farther.
(vi)	The image of distant objects are formed before the retina.	The image of nearby objects are formed behind the retina.
(vii)	The defect can be corrected using concave lens.	The defect can be corrected using convex lens.

21) Give a detailed account on Galileo's concepts about force, motion and inertia of bodies.

Answer : Galileo proposed the following concepts about force, motion and inertia of bodies:

- (i) The natural state of all earthly bodies is either the state of rest or the state of uniform motion.
- (ii) A body in motion will continue to be in the same state of motion as long as no external force is applied.
- (iii) When a force is applied on bodies, they resist any change in their state. This property of bodies is called 'inertia'.
- (iv) When dropped from a height in vacuum, bodies of different size, shape and mass fall at the same rate and reach the ground at the same time.

22) Define the unit of resistance.

Answer : i) The SI unit of resistance is ohm.

ii) Resistance of a conductor is said to be one ohm, if a current of one ampere flows through it, when a potential difference of one volt is maintained across its ends.

23) How will you predict the nature of chemical bonds using electronegativity values?

Answer : (i) If the difference in electronegativity between the two elements is 1.7, the bond has 50% ionic character and 50% covalent character.

(ii) If the difference is less than 1.7, the bond is considered to be covalent.

(iii) If the difference is greater than 1.7, the bond is considered to be ionic.

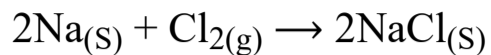
24) What is a combination reaction? Write its types, Write an equation for each type of combination reaction.

Answer : A combination reaction is a reaction in which two or more reactants combine to form a compound.

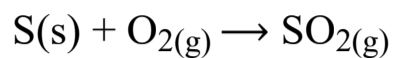
a) Element + Element → Compound:

i) In this type of combination reaction, two elements react with one another to form a compound.

ii) Metal reacts with non-metallic elements.

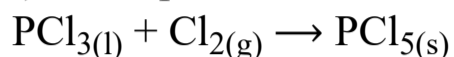


iii) Two non-metals react with each other.



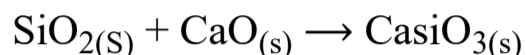
b) Compound + Element → Compound:

i) A compound reacts with an element to form a new compound.



c) Compound + Compound → Compound:

i) It is a reaction between two compounds to form a new compound.



25) Explain the physiological effects of Auxins.

Answer : Auxins bring about a variety of physiological effects in different parts of the plant body. Some of them are discussed below:

(i) Auxins promote the elongation of stems and coleoptiles which makes them to grow.

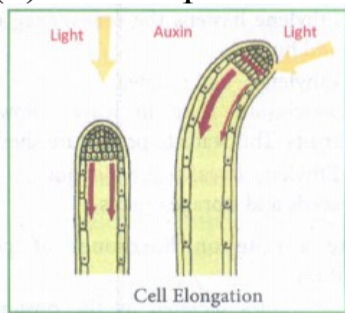
(ii) Auxins induce root formation at low concentration and inhibit it at higher concentration.

(iii) The auxins produced by the apical buds suppress growth of lateral buds. This is called Apical Dominance.

(iv) Seedless fruits without fertilization are induced by the external application of auxins. (Parthenocarpy).

Examples: Watermelon, Grapes, Lime etc.

(v) Auxins prevent the formation of abscission layer.



26) Plants seeds got from other countries are tested in plant quarantine. Reason out.

Answer : Plant materials brought into a country must be free from pathogens. It may lead to outbreak of new disease or introduction of a new pathogen into the environment. Thus plant materials (seeds / saplings) are tested in plant quarantine.

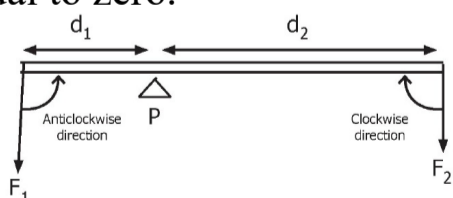
PART - D

2 x 7 = 14

Answer The All Questions :

27) Explain the principle of moments:

Answer : (i) At equilibrium, the algebraic sum of the moments of all individual forces about any point is equal to zero.



(ii) In the illustration, the force F_1 , produces an anticlockwise rotation at a distance d_1 from the point of pivot (P) called fulcrum and force F_2 produces a clockwise rotation at a distance d_2 from the point of pivot P. The principle of moments can be written as follows;

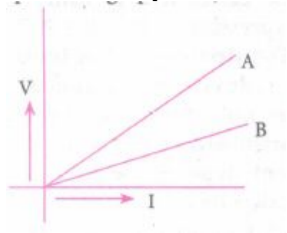
Moment in Moment in

Clockwise direction = Anticlockwise direction

$$F_1 \times d_1 = F_2 \times d_2$$

28) V-I graphs for the two wires A and B are shown in the figure. If we connect both the wires one by one to the same battery, which of the two will produce more heat per unit time? Give justification for your answer.

Answer : Heat produced per unit time = V^2/R
Now slope of V-I graph = R (resistance of wire).



Since slope of V-I graph for wire A is greater than the slope of V-I graph for wire B, therefore, resistance of wire A is greater than the resistance of wire B, Hence, more heat will be produced per unit time in wire B than in wire A.

1 x 7 = 7

29) A person with hypermetropia eye can see objects beyond the distance of 20. suppose he went to see the closer object at 1.5. Find the focal length and power of the convex lens he must wear.

Answer : Given: $d = 20$ m, $D = 1.5$ m

According to the formula $f = \frac{dD}{d-D}$

Formula used:

$$\text{Focal length } f = \frac{dD}{d-D}$$

$$\text{Power of lens} = \frac{1}{f}$$

$$f = \frac{20 \times 1.5}{20 - 1.5} = \frac{30}{18.5} = 1.6$$

$$\text{Power of correction lens} = \frac{1}{f} = \frac{1}{1.6} = 0.62 \text{ diopetre}$$

