TARGET: CBSE Boards 2025-26

Science Important MCQ-Questions

INSTRUCTIONS **BATCH:10th**

Section A *– Questions 1 to 45 are MCQs of 1 mark each.*
Section B *– Questions 45 to 50 are 'assertion and reasons' of 1 mark each.*

Section A

1. The type of reaction taking place when barium chloride solution is added to copper sulphate solution is:
(I) Combination reaction (II) Displacement reaction
(III) Double Displacement reaction (IV) Precipitation reaction
Select the correct option:
(a) Only (I) (b) Only (II)
(c) Both (II) and (IV) (d) Both (III) and (IV)
Ans D
2. A student performed several experiments and then noted down his observations in a tabular form as given below:

S No.	Observations	Conclusion
(I)	When copper powder is heated in a china dish, the surface of copper powder turns black	Combination Reaction
(II)	Hydrogen gas is evolved when Iron reacts with dil. HCl.	Decomposition Reaction
(III)	A black precipitate is formed along with sulphuric acid solution when hydrogen sulphide gas is passed through copper sulphate solution	Double Displacement Reaction
(IV)	When electricity is passed through molten aluminium chloride, aluminium metal is formed along with a gas.	Displacement Reaction

Select the option that correctly describes the conclusions made by the student regarding type of reaction taking place:
(a) Both (I) and (II) (b) Both (I) and (III)
(c) Both (II) and (III) (d) (I), (III) and (IV)
Ans D
3. Calcium phosphate is present in tooth enamel. Its nature is:
(a) basic (b) acidic (c) neutral (d) amphoteric
Ans A

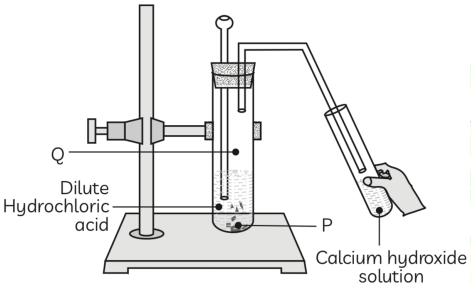
4. Study the following table and choose the correct option:

	Salt	Parent Acid	Parent Base	Nature of Salt
(a)	Sodium Chloride	HCl	NaOH	Basic
(b)	Sodium Carbonate	H_2CO_3	NaOH	Neutral
(c)	Sodium Sulphate	H_3SO_4	NaOH	Acidic
(d)	Sodium Acetate	CH_3COOH	NaOH	Basic

Ans D

5. Which of the following is/are true when HCl(g) is passed through water?
(I) It does not ionise in the solution as it is a polar compound.
(II) It ionises in the solution to give chloride ions.
(III) It gives both hydrogen and hydroxyl ions in the solution.
(IV) It forms hydronium ion in the solution due to the combination of hydrogen ion with water molecule.
(a) Only (I) (b) Only (III) (c) (II) and (IV) (d) (III) and (IV)
Ans C

6. Study the experimental set up shown in given figure and choose the correct option from the following:



	P	Q	Change observed in Calcium hytroxide solution
(a)	K_2CO_3	Cl_2 gas	No change
(b)	$KHCO_3$	CO_2 gas	No change
(c)	$KHCO_3$	H_2 gas	Turns milky
(d)	K_2CO_3	CO_2 gas	Turns milky

Ans D

7. When HCL is added to Manganese dioxide a gas is released which when passed over slaked lime forms a substance X which is a great oxidising agent. Substance X is ……
a) Calcium Chloride (b) Magnesium Chloride
(c) Calcium Hydroxide (d) Calcium Oxychloride
Ans D

Read the passage below and answer Questions 8 and 9.
The primary reason behind the formation of the toxic foam is high phosphate content in the wastewater because of detergents used in dyeing industries, dhobi ghats and households. Yamuna's pollution level is so bad that parts of it have been labelled 'dead' as there is no oxygen in it for aquatic life to survive.

8. Predict the pH value of the water of river Yamuna if the reason for froth is high content of detergents dissolved in it:
(a) 10-11 (b) 5-7 (c) 2-5 (d) 7
Ans A

9. If a sample of water containing detergents is provided to you, which of the following methods will you adopt to neutralize it?
(a) Treating the water with baking soda (b) Treating the water with vinegar
(c) Treating the water with caustic soda (d) Treating the water with washing soda
Ans B

10. Hydrogen gas is not evolved when aluminium or zinc reacts with nitric acid. Which statement(s) give(s) the correct explanation?
(I) HNO_3 is a strong oxidising agent.
(II) HNO_3 oxidises the hydrogen produced into water and itself gets reduced to either N_2O.
(III) Aluminium and zinc have high affinity for nitrogen.
(IV) Magnesium react with HNO_3 to produce H_2 gas.
Select the correct option:
(a) Only (I) (b) (I) and (II) (c) (I), (II) and (III) (d) (I), (II) and (IV).
Ans B

11. The solution of which of the following compounds will not conduct electricity?
(a) CCl_4 (b) NaCl (c) $CaCl_2$ (d) KBr
Ans A

12. A student studies that soap solution results in micelle formation which helps to remove dirt. It has a unique orientation which helps in keeping the dirt out of the water. What helps the dirt to risen away?
(a) Suspension of the dirt in the micelles
(b) A collection of water molecules in the centre of the micelle
(c) Attraction between the ionic end and the dirt to remove it
(d) Mixing of the soap molecules along with the dirt to make it heavier
Ans A

13. Consider the following oils:
(I) Mobil oil (II) Castor oil (III) Turpentine oil
(IV)Kerosene (V) Mustard oil (VI)Coconut oil
Which of these can be used for preparation of soap?
(a) (I), (II), (III), (VI) (b) (II), (V), (VI)
(c) (II), (III), (V), (VI) (d) (II), (III), (VI)
Ans B

14. A student is given equal amount of three samples of water with temporary hardness labelled as 'A', 'B' and 'C'. He keeps the three samples at different temperatures – A at room temperature, B at 50 ºC and C at 95 ºC. Which sample will give maximum amount of lather when 10 mL of soap solution is added to each sample and shaken for equal time?
(a) A only (b) Both A and B (c) Both B and C (d) C only
Ans C

15. 1 mL ethanol and 1 mL glacial acetic acid are mixed with each other along with a few drops of concentrated sulphuric acid in the test tube. Which of the following compound is an isomer of the compound so formed in above reaction?
(a) Butanal (b) Butanone (c) Butanoic Acid (d) Butanol
Ans C

Read the passage below and answer Questions 16, 17 and 18.
The digestion in stomach is taken care of by the gastric glands present in the wall of the stomach. These release hydrochloric acid, a protein digesting enzyme called pepsin, and mucus. The hydrochloric acid creates an acidic medium which facilitates the action of the enzyme pepsin. The mucus protects the inner lining of the stomach from the action of the acid under normal conditions. From the stomach, the food now enters the small intestine. The food coming from the stomach is acidic and has to be made alkaline for the pancreatic enzymes to act. Bile juice from the liver accomplishes this in addition to acting on fats.

16. In which medium pepsin and trypsin are active?
(a) Basic and acidic medium (b) Acidic and basic medium
(c) Neutral medium (d) Sometimes acidic sometimes basic medium
Ans B

17. Small Intestine receives the secretions from _____ for complete digestion.
(a) mouth and stomach (b) stomach and liver
(c) liver and pancreas (d) None of the Above
Ans D

18. Thyroid gland is a bilobed structure situated in our neck region. It secretes a hormone called thyroxine. Iodine is necessary for the thyroid gland to make thyroxine. Thyroxine regulates carbohydrate, protein and fat metabolism in the body. It promotes growth of body tissues also. When there is an excess of thyroxine in the body, a person suffers from hyperthyroidism and if this gland is underactive it results in hypothyroidism. Hyperthyroidism is diagnosed by blood tests that measure the levels of thyroxine and Thyroid Stimulating Hormone (TSH). Hypothyroidism is caused due to the deficiency of iodine in our diet resulting in a disease called goitre.

(A) Where is thyroid gland situated in our body?
(B) State the function of thyroxine in human body.
(C) What is hyperthyroidism?
(D) How can we control hypothyroidism?

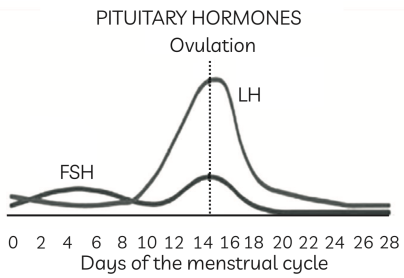
19. In Alzheimer's disease there is a loss of connection between the nerve cells, or neurons, in the brain because of which:
(I) information cannot pass easily between different areas of the brain.
(II) information cannot pass easily between the brain and the muscles or organs.
(III) information cannot be acquired by the dendrite.
(IV) gustatory and olfactory receptors stop working.
Select the correct statements:
(a) Both (I) and (II) (b) Both (II) and (III)
(c) Both (I) and (IV) (d) Both (II) and (IV)
Ans A

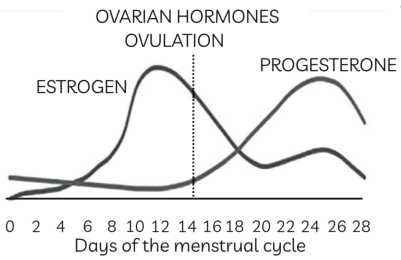
20. What can be concluded about the division in Plasmodium?
(a) The cyst divides repeatedly to form many daughter cells.
(b) The cell divides multiple times giving rise to many daughter cells.
(c) The nucleus divides repeatedly inside the cell to form new daughter cells.
(d) Thy cyst enlarges in size and then bursts producing many new daughter cells.
Ans C

21. Which among the following diseases is not sexually transmitted by Virus?
(a) Syphilis (b) Hepatitis
(c) HIV-AIDS (d) Gonorrhoea
Ans B

Read the passage below and answer Questions 22-25.

Human reproduction is a form of sexual reproduction resulting in human fertilization. It typically involves sexual intercourse between a man and a woman. During sexual intercourse, the interaction between the male and female reproductive systems results in fertilization of the woman's ovum by the man's sperm. Offsprings are produced by the fusion of gametes (sex cells) from each parent. Hence, the newly formed individual will be different from parents, both genetically and physically.





22. Study the graphs showing the levels of ovarian hormones and pituitary hormones in human females and select the correct statements.
(I) The level of oestrogen hormone increases in the first 12 days of the menstrual cycle.
(II) The level of LH secreted by the pituitary gland reaches a peak when ovulation takes place.
(III) The level of progesterone hormone decreases when ovulation takes place.
(IV) The level of FSH secreted by the pituitary gland is minimum when ovulation takes place.
(a) Both (I) and (III) (b) Both (I) and (IV)
(c) Both (I) and (II) (d) (I), (II) and (IV)
Ans C

23. The table below gives the differences between menopause and menarche. Select the row containing incorrect information.

	Menopause	Menarche
(a)	It is the end of menstruation in human females	It is the start of menstruation in human females
(b)	It occurs at around 45-50 years of age	It occurs at around 11-16 years of age
(c)	It marks the end of reproductive phase of a female	It marks the beginning of the reproductive phase of a female
(d)	There is an elevated level of oestrogen	There is a decline in the level of oestrogen

Ans D

24. The part of female reproductive system through which the uterus opens into the vagina is:
(a) Clitoris (b) Cervix (c) Scrotum (d) Abdomen
Ans B

25. Which of the following statements is not true with respect to variation?
(a) All variations in a species have unequal chances of survival.
(b) Change in genetic composition results in variation.
(c) Organisms with drastic change in genetic composition has best chances of survival in case there is a change in niche.
(d) Variation is minimum in asexual reproduction.
Ans C

26. Lokesh allowed to mate a black dog having homozygous genotype with a black heterozygous dog, a total of four puppies were produced. What will be the colour of the puppies?
a. One black, one white and two brown
b. Two black and Two white.
c. Two black, one white and one brown.
d. Three black and one white.
Ans B

Read the passage below and answer Questions 28-32.

In mice, black coat colour (B) is dominant over brown coat colour (b), and a solid pattern (S) is dominant over white spotted (s). Colour and spotting are controlled by genes that assort independently. A homozygous (both alleles identical) black, spotted mouse is crossed with a homozygous brown, solid mouse.

27. The genotypes of the parents is:
(a) Bbss and bbSS (b) BBss and bbSs
(c) BbSs and BbSs (d) BBss and bbSS
Ans D

28. Select the incorrect statements regarding the F1 progeny obtained:
(I) Phenotype of all mice of F1 generation is brown coat with solid pattern.
(II) Phenotype of all mice of F1 generation is black coat with solid pattern.
(III) Genotype of all mice of F1 generation is BbSs.
(IV) Genotype of all mice of F1 generation is BBSs.
(a) Both (I) and (III) (b) Both (II) and (III)
(c) Both (II) and (IV) (d) Both (I) and (IV)
Ans D

29. The table below shows the phenotypic ratio of F2 generation when mice of F1 generation are crossed with each other. Select the row containing correct information:

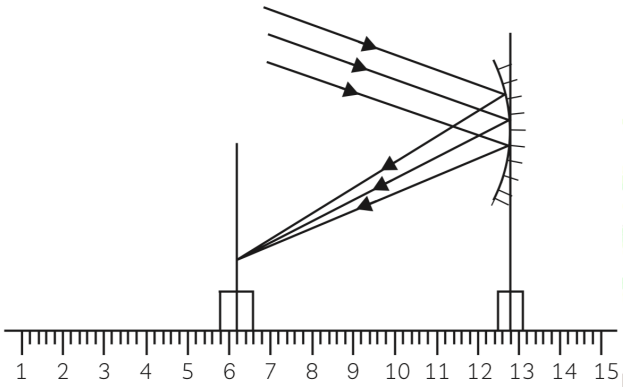
	Black coat with solid pattern	Brown coat with spotted pattern	Black coat with spotted pattern	Brown coat with solid pattern
(a)	9	1	3	3
(b)	9	3	1	3
(c)	3	1	9	3
(d)	9	3	3	1

Ans A

30. From the cross mentioned in (30) above, it can be concluded that:
(a) The phenotype of progeny is independent of inherited genes.
(b) The black/brown colour of coat and solid/spotted pattern are inherited independently.
(c) The genotype of progeny does not decide the phenotype.
(d) The phenotype and genotype of progeny are independently inherited.
Ans B

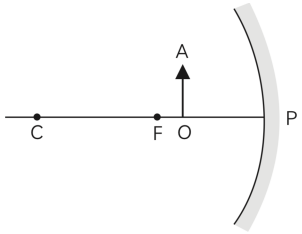
31. Suppose a test cross is carried out by mating F1 mice with brown, spotted mice. The percentage of progeny having black coat with solid pattern will be:
(a) 75% (b) 50% (c) 25% (d) 0%
Ans B

32. The focal length of the concave mirror in the following experimental set up is:



(a) 12.4 cm (b) 6.3 cm (c) 6.0 cm (d) 6.6 cm
Ans D

33. For the diagram shown, according to the new Cartesian sign convention the magnification of the image formed will have the following specifications:



(a) Sign - Positive, Value - Less than 1
(b) Sign - Positive, Value - More than 1
(c) Sign - Negative, Value - Less than 1
(d) Sign - Negative, Value - More than 1
Ans B

34. A student focussed the image of a candle flame on a white screen using a convex lens. He noted down the position of the candle screen and the lens as under:
Position of candle = 26.0 cm
Position of convex lens = 50.0 cm
Position of the screen = 90.0 cm

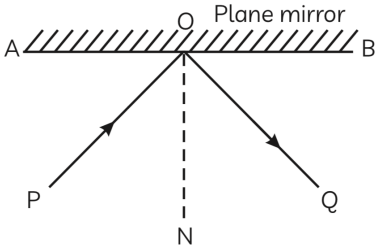
Students noted down the values of object distance (u), image distance (v) and also calculated the focal length (f) of the convex lens used. Select the row containing the correct values as per the sign convention:

	Object Distance (u) cm	Image Distance (v) cm	Focal Length (f) cm
(a)	–26 cm	–50 cm	+30 cm
(b)	–26 cm	–40 cm	–15 cm
(c)	–24 cm	–40 cm	+15 cm
(d)	–24 cm	+40 cm	+15 cm

Ans D

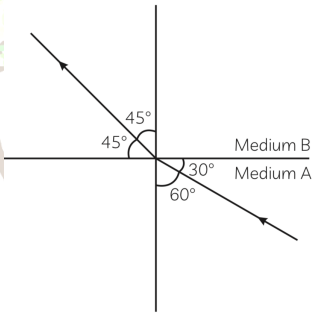
35. A converging lens forms a three times magnified image of an object, which can be take on a screen. If the focal length of the lens is 30 cm, then the distance of the object from the lens is:
(a) –55 cm (b) –50 cm (c) –45 cm (d) –40 cm
Ans D

36. The angle between the incident and reflected rays is 90° as shown below:



If the plane mirror is rotated by 10° about O in the anti-clockwise direction, then the angle between the incident and reflected rays will be:
(a) 55° (b) 90° (c) 100° (d) 110°
Ans D

37. The figure shows a ray of light as it travels from medium A to medium B.



The refractive index of the medium A relative to medium B is:
(a) $\frac{\sqrt{3}}{\sqrt{2}}$ (b) $\frac{\sqrt{2}}{\sqrt{3}}$ (c) $\frac{1}{\sqrt{2}}$ (d) $\sqrt{2}$
Ans B

38. While finishing from a dock, you saw a fish in the water. For this, you can use either a bow and arrow, or a laser gun. Which of the following strategies do you follow?
(a) Aim the arrow as well as the laser gun both at the fish.
(b) Aim the arrow below the fish and the laser gun at the fish.
(c) Aim the arrow below the fish and the laser gun above the fish.
(d) Aim the arrow below the fish and the laser gun below the fish
Ans B

39. A person cannot see distinctly the objects kept beyond 2 m. This defect can be corrected by using a lens of power:
(a) +0.5 D (b) –0.5 D (c) +0.2 D (d) –0.2 D
Ans B

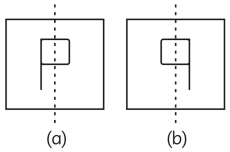
40. The resistance of a resistor is reduced to half of its initial value. In doing so, if other parameters of the circuit remain unchanged, the heating effects in the resistor will become:
(a) two times (b) half (c) one-fourth (d) four times
Ans A

41. Consider an electric iron which consumes 1 kW electric power when operated at 220 V. The table below gives the rating of ideal fuse that should be used in this case and the heat generated in the electric iron in 30 seconds.

	Ideal Rating of Fuse (A)	Heat Generated in 30s (J)
(a)	4 A	3.0×10^4
(b)	10 A	1.0×10^4
(c)	5A	3.0×10^4
(d)	5A	3.6×10^6

Anc C

42. If the microwave oven and the electric blender of power ratings 1200 W and 350 W respectively are both used for 5 hours daily, the electrical energy consumed in a day is:
(a) 7.75 units (b) 6.0 units (c) 15.5 units (d) 232.5 units
Ans A
43. Electricity generated at the power plant, transmission and distribution lines. Which of the following represents the correct sequence of electricity from distribution lines to our homes?
(a) Distribution line → Pole → Main supply → Fuse → Electricity meter → Distribution box → To separate circuits
(b) Distribution Line → Main supply → Pole → Electricity meter → Fuse → Distribution box → To separate circuits
(c) Distribution line → Pole → Main supply— Fuse → Distribution box → Electricity meter → To separate circuits
(d) Distribution line → Pole → main supply → Electricity meter → Fuse → Distribution box → To separate circuits
Ans A
44. What is the frequency of AC supply in USA if the current changes its sign after every 1/120 sec?
(a) 240 hz (b) 120 hz (c) 60 hz (d) 50 hz
Ans C
45. The north pole of a long bar magnet was pushed slowly into a short solenoid connected to a galvanometer. The magnet was held stationary for a few seconds with the north pole in the middle of the solenoid and then withdrawn rapidly.
(I) The maximum deflection of the galvanometer will be observed when the magnet was moving out of the solenoid.
(II) The maximum deflection of the galvanometer will be observed when the magnet was moving slowly into of the solenoid.
(III) The minimum deflection of the galvanometer will be observed when the magnet was at rest inside the solenoid.
(IV)The minimum deflection of the galvanometer will be observed when the magnet was moving towards the solenoid. Select the correct observations:
(a) Both (I) and (III) (b) Both (II) and (III)
(c) Both (I) and (IV) (d) Both (II) and (IV)
Ans A
46. Assertion (A): Atul made a letter P as shown in figure (a) on the card board and saw in the pond, which appeared like given figure (b).



Reason (R): The image in pond will be laterally inverted as it acts as a plane mirror.
Ans A is wrong but R is right
47. Assertion (A): If a wire, attached to a battery, is stretched to double its length, the heat through the wire will increase 4 times.
Reason (R): Both resistance and resistivity of a material vary with temperature.
Ans A is wrong R is right
48. Assertion (A): The embryo formation is completed in fallopian tube.
Reason (R): Embryo gets nutrition from the mother's blood directly from the walls of uterus.
Ans Both A and R is wrong.

49. Assertion (A): Fungi is autotrophic and hence can produce food on its own with the help of sunlight.

Reason (R): Fungi will store 10% of the energy that it obtains from sunlight.
Both A and R are wrong

50. Assertion (A): Soaps are not effective in hard water.
Reason (R): The charged tails of detergents do not form insoluble precipitates with the calcium and magnesium ions in hard water.
Ans A is right but R is wrong