

MANU VATIKA SCHOOL, BUDHLADA  
MCQ TEST CLASS 10<sup>TH</sup> SUBJECT: SCIENCE

NAME \_\_\_\_\_

ROLL NO \_\_\_\_\_

SECTION \_\_\_\_\_

**PART A**  
**CHEMISTRY**

- 1 Magnesium ribbon is rubbed before burning because it has a coating of  
(a) basic magnesium carbonate (b) basic magnesium oxide  
(c) basic magnesium sulphide (d) basic magnesium chloride
2. Which of the following statements about the given reaction are correct?  
 $3\text{Fe (s)} + 4\text{H}_2\text{O (g)} \rightarrow \text{Fe}_3\text{O}_4 \text{ (s)} + 4\text{H}_2 \text{ (g)}$   
(i) Iron metal is getting oxidised (ii) Water is getting reduced  
(iii) Water is acting as reducing agent (iv) Water is acting as oxidising agent  
(a) (i), (ii) and (iii) (b) (ii) and (iv) (c) (i), (ii) and (iv) (d) (ii) and (iv)
3. Which of the following are exothermic processes?  
(i) Reaction of water with quick lime (ii) Dilution of an acid  
(iii) Evaporation of water (iv) Sublimation of camphor (crystals)  
(a) (i) and (ii) (b) (ii) and (iii) (c) (i) and (iv) (d) (ii) and (iv)
4. Oxidation is a process which involves  
(a) addition of oxygen (b) addition of hydrogen  
(c) removal of oxygen (d) removal of hydrogen
5. The process of reduction involves  
(a) addition of oxygen (b) addition of hydrogen  
(c) removal of oxygen (d) removal of hydrogen
6. Give the ratio in which hydrogen and oxygen are present in water by volume.  
(a) 1:2 (b) 1:1 (c) 2:1 (d) 1:8
7. Which among the following statement(s) is (are) true?  
Exposure of silver chloride to sunlight for a long duration turns grey due to  
(i) the formation of silver by decomposition of silver chloride (ii) sublimation of silver chloride  
(iii) decomposition of chlorine gas from silver chloride (iv) oxidation of silver chloride  
(a) (i) only (b) (i) and (iii) (c) (ii) and (iii) (d) (iv) only
8.  $\text{MnO}_2 + 4\text{HCl} \rightarrow \text{MnCl}_2 + 2\text{H}_2\text{O} + \text{Cl}_2$   
Identify the substance oxidized in the above . equation.  
(a)  $\text{MnCl}_2$  (b)  $\text{HCl}$  (c)  $\text{H}_2\text{O}$  (d)  $\text{MnO}_2$
9. A substance 'X' is used in white-washing and is obtained by heating limestone in the absence of air. Identify 'X'.  
(a)  $\text{CaOCl}_2$  (b)  $\text{Ca (OH)}_2$  (c)  $\text{CaO}$  (d)  $\text{CaCO}_3$
10. A substance added to food containing fats and oils is called:  
(a) Oxidant (b) Rancid (c) Coolant (d) Antioxidant
11. In which of the following chemical equations, the abbreviations represent the correct states of the reactants and products involved at reaction temperature?  
(a)  $2\text{H}_2 \text{ (l)} + \text{O}_2 \text{ (l)} > 2\text{H}_2\text{O (g)}$  (b)  $2\text{H}_2 \text{ (g)} + \text{O}_2 \text{ (l)} > 2\text{H}_2\text{O (l)}$   
(c)  $2\text{H}_2 \text{ (g)} + \text{O}_2 \text{ (g)} > 2\text{H}_2\text{O (l)}$  (d)  $2\text{H}_2 \text{ (g)} + \text{O}_2 \text{ (g)} > 2\text{H}_2\text{O (g)}$
12. Name the products formed when iron filings are heated with dilute hydrochloric acid  
(a) Fe (III) chloride and water (b) Fe (II) chloride and water  
(c) Fe (II) chloride and hydrogen gas (d) Fe (III) chloride and hydrogen gas
13. When  $\text{SO}_2$  gas is passed through saturated solution of  $\text{H}_2\text{S}$ , which of the following reaction occurs?  
(a)  $\text{SO}_2 + 2\text{H}_2\text{S} \rightarrow 2\text{H}_2\text{O} + 3\text{S}$  (b)  $\text{SO}_2 + 2\text{H}_2\text{S} \rightarrow \text{H}_2\text{O} + 3\text{S}$   
(c)  $\text{SO}_2 + \text{H}_2\text{S} \rightarrow \text{H}_2\text{O} + \text{S}$  (d)  $\text{SO}_2 + \text{H}_2\text{O} \rightarrow \text{SO}_3 + \text{H}_2$
14. Select the oxidising agent for the following reaction:  
 $\text{H}_2\text{S} + \text{I}_2 > 2\text{HI} + \text{S}$   
(a)  $\text{I}_2$  (b)  $\text{H}_2\text{S}$  (c)  $\text{HI}$  (d)  $\text{S}$
15. What happens when a solution of an acid is mixed with a solution of a base in a test tube?  
(i) Temperature of the solution decreases (ii) Temperature of the solution increases

- (in) Temperature of the solution remains the same (iv) Salt formation takes place  
 (a) (i) and (iv) (b) (i) and (iii) (c) (ii) only (d) (ii) and (iv)
16. Which one of the following salts does not contain water of crystallisation?  
 (a) Blue vitriol (b) Baking soda (c) Washing soda (d) Gypsum
17. What is formed when zinc reacts with sodium hydroxide?  
 (a) Zinc hydroxide and sodium (b) Sodium zincate and hydrogen gas  
 (c) Sodium zinc-oxide and hydrogen gas (d) Sodium zincate and water
18. Tomato is a natural source of which acid?  
 (a) Acetic acid (b) Citric acid (c) Tartaric acid (d) Oxalic acid
19. Brine is an  
 (a) aqueous solution of sodium hydroxide (b) aqueous solution of sodium carbonate  
 (c) aqueous solution of sodium chloride (d) aqueous solution of sodium bicarbonate
20.  $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$  is  
 (a) washing soda (b) baking soda  
 (c) bleaching powder (d) tartaric acid
21. How many water molecules does hydrated calcium sulphate contain?  
 (a) 5 (b) 10 (c) 7 (d) 2
22. Sodium carbonate is a basic salt because it is a salt of a  
 (a) strong acid and strong base (b) weak acid and weak base  
 (c) strong acid and weak base (d) weak acid and strong base
23. Alkalis are  
 (a) acids, which are soluble in water (b) acids, which are insoluble in water  
 (c) bases, which are insoluble in water (d) bases, which are soluble in water
24. Nettle sting is a natural source of which acid?  
 (a) Methanoic acid (b) Lactic acid (c) Citric acid (d) Tartaric acid
25. Tooth enamel is made up of  
 (a) calcium phosphate (b) calcium carbonate  
 (c) calcium oxide (d) potassium
26. Sodium hydroxide turns phenolphthalein solution  
 (a) pink (b) yellow (c) colourless (d) orange
27. Which salt is acidic in nature?  
 (A)  $\text{NH}_4\text{Cl}$   
 (B)  $\text{CH}_3\text{COONH}_4$   
 (C)  $\text{NaCl}$   
 (D)  $\text{Na}_2\text{CO}_3$
28. Sodium carbonate reacts with hydrochloric acid and produces –  
 (A)  $\text{NaCl}$   
 (B)  $\text{CO}_2$   
 (C)  $\text{H}_2\text{O}$   
 (D) All of the above
29. The chemical formula of magnesium oxide is \_\_\_\_\_.  
 (a)  $\text{MgO}_2$   
 (b)  $\text{Mg}_2\text{O}$   
 (c)  $\text{MgO}$   
 (d)  $\text{Mg}(\text{OH})_2$
30. What happens when lead nitrate reacts with potassium iodide?  
 (a) They will not react  
 (b) A large amount of hydrogen will be released  
 (c) Yellow ppt of lead iodide and potassium nitrate will be produced  
 (d) Evolution of gas will occur
31. Which of the following reactions is used in black-and-white photography?  
 (a) Combination Reaction

- (b) Decomposition Reaction
- (c) Displacement reaction
- (d) Oxidation reaction

32. A researcher adds barium hydroxide to hydrochloric acid to form a white-coloured barium chloride. Which of the following option gives the balanced chemical equation of the reaction?

- (a)  $\text{HCl} + \text{Ba}(\text{OH})_2 \rightarrow \text{BaCl}_2 + 2\text{HOH}$
- (b)  $2\text{HCl} + \text{Ba}(\text{OH})_2 \rightarrow \text{BaCl}_2 + 2\text{HOH}$
- (c)  $2\text{HCl} + \text{Ba}(\text{OH})_2 \rightarrow \text{BaH}_2 + 2\text{HCl} + \text{O}_2$
- (d)  $\text{HCl} + 2\text{Ba}(\text{OH}) \rightarrow 2\text{BaCl}_2 + 2\text{HOH} + \text{O}_2$

33. Magnesium ribbon is rubbed before burning because it has a coating of

- (a) basic magnesium carbonate
- (b) basic magnesium oxide
- (c) basic magnesium sulphide
- (d) basic magnesium chloride

34. The chemical formula of lead sulphate is

- (a)  $\text{Pb}_2\text{SO}_4$
- (b)  $\text{Pb}(\text{SO}_4)_2$
- (c)  $\text{PbSO}_4$
- (d)  $\text{Pb}_2(\text{SO}_4)_3$

35. When carbon dioxide is passed through lime water,

- (a) Calcium hydroxide is formed
- (b) A white precipitate of  $\text{CaO}$  is formed
- (c) Lime water turns milky
- (d) Color of lime water disappears

### PHYSICS

1.) A ray of light passing through the center of curvature of a concave mirror:

- a.) Passes undeviated after reflection
- b.) Passes through the focus after reflection
- c.) Becomes parallel to the principal axis
- d.) Is reflected back along the same path

2.) Magnification produced by a rear view mirror fitted in vehicles:

- A) is less than 1
- B) is more than 1
- C) is equal to 1
- D) can be more or less than 1 according to position of object

3) A concave mirror produces a magnification of +4, the object is placed:

- A) At the focus
- B) Between focus and centre of curvature
- C) Between focus and pole
- D) Beyond centre of curvature

4) which position of object will produce a magnified virtual image, if a concave mirror of focal length 15 cm is being used: A) 10cm B) 20 cm C) 30 cm D) 45 cm

5) A point object is placed at a distance of 20 cm in front of a concave mirror of focal length 20 CM, the image will form at:

- A) at infinity
- B) at focus
- C) at pole
- D) behind the mirror

6) Laws of reflection holds good for which type of mirrors:

- A) only concave mirror
- B) convex and concave mirror
- C) plane mirror and convex mirror
- D) for all types of mirrors irrespective of shape.

7) When a ray of light enters from air to glass obliquely, which of the following remains unchanged?

- A) Speed
- B) Wavelength
- C) Frequency
- D) Direction

8) A light ray is incident normally on a plane glass slab. Its lateral displacement will be:

- A) Maximum
- B) Minimum
- C) Zero
- D) Depends on thickness

9) The speed of light is maximum in —

- A. Water
- B. Glass
- C. Air
- D. Diamond

10) A coin at the bottom of a beaker appears raised when water is poured into it because of:

- A. Reflection
- B. Refraction
- C. Dispersion
- D. Scattering

11) A ray of light in air is incident at  $60^\circ$  on a transparent medium. The reflected and refracted rays are perpendicular to each other. The refractive index of the medium is:

- A.  $\sqrt{2}$
- B.  $\sqrt{3}$
- C. 1.5
- D. 1.732

12) If the refractive index of water is  $4/3$  and that of glass is  $3/2$ , then refractive index of glass w.r.t water is:

- A.  $8/9$
- B.  $9/8$
- C.  $3/4$
- D.  $4/3$

13) A concave mirror produces an image twice the size of the object. If the image is real, the object is placed —

- A. Between F and C
- B. Between F and P
- C. At C
- D. Beyond C

14) A sharp image of distinct object is obtained on a screen using convex lens. In order to determine the focal length of the lens, you need to measure the distance between:

- A) Lens and the object    B) lens and the screen    C) object and screen    D) none

**Read the passage and answer the Questions ( 15- 18)**

The degree of convergence and divergence of light rays by a lens is expressed in terms of power of lens. When two more lenses are placed in contact with each other, then total power of this combination is the sum of individual powers. You are given three lenses A,B and C with focal lengths 10cm, 20 cm and 30 cm. A and B are convex lens whereas C is concave lens.

15) The power of lenses A,B and C are resp:

- A) 10D, 5D , -3.3D                      B) -10D, -5D, 3.3D                      C) 0.1D, 0.05D, -0.03D                      D) -0.1D, -0.05D, 0.03D

16) The focal length of the combination of lenses is:

- A) 8.33 cm                      B) 8.33 m                      C) 8.55 cm                      D) None of these

17) The power of combination of lenses is:

- A) -11.7D                      B) 11.7D                      C) -0.12D                      D) 0.12D

18) This combination behaves as a:

- A) convex lens                      B) concave lens                      C) Either A or B depending on sequence                      D) none

19) The least distance of distinct vision for a normal human eye is –

- A. 10 cm                      B. 25 cm                      C. 50 cm                      D. 100 cm

20) The near point of a hypermetropic (long-sighted) person is –

- A. Less than 25 cm                      B. 25 cm                      C. More than 25 cm                      D. Infinity

21) The defect in the eye due to loss of power of accommodation in old age is –

- A. Myopia                      B. Hypermetropia                      C. Presbyopia                      D. Astigmatism

22) The colour of the sky appears blue due to –

- A. Reflection of light    B. Scattering of light                      C. Dispersion of light                      D. Refraction of light

23) The twinkling of stars is due to –

- A. Reflection by atmosphere                      B. Scattering of light  
C. Atmospheric refraction                      D. Dispersion of light

24) The colour of the clear sky changes from blue to white when –

- A. Dust and smoke are absent                      B. The air is clean  
C. Large particles like dust and smoke are present                      D. The wavelength of blue light decreases

25.) If the radius of curvature of a spherical mirror is increased, what happens to its focal length?

- A.) Increases                      B.) Decreases                      C.) Remains same                      D.) Becomes zero

26.) A convex lens of focal length 15 cm forms a real image of an object placed at 20 cm. Find image distance:

- A.) 60 cm                      B.) 45 cm                      C.) 12 cm                      D.) 8 cm

27.) The human eye can focus objects at different distances due to –

- A.) Retinal adjustment                      B.) Corneal curvature  
C.) Ciliary muscles changing focal length of eye lens                      D.) Pupil contraction

28.) A student cannot see distant objects clearly. Which lens can correct this defect and what is it called?

- A.) Convex, myopia                      B.) Concave, myopia  
C.) Convex, hypermetropia                      D.) Concave, hypermetropia

29.) A beam of white light passes through a glass prism. Which of these colours emerges closest to the base of the prism?

- A.) Violet                      B.) Blue                      C.) Red                      D.) Yellow

30.) A concave mirror produces a real, inverted image twice the size of the object. The image is 40 cm from the mirror. Find focal length.

- A.) -10 cm                      B.) -13.3 cm                      C.) -20 cm                      D.) -26.7 cm

31.) Two lenses of focal lengths +15 cm and –30 cm are placed in contact. The equivalent focal length is:

- A.) +10 cm      B.) +30 cm      C.) -30 cm      D.) -10 cm

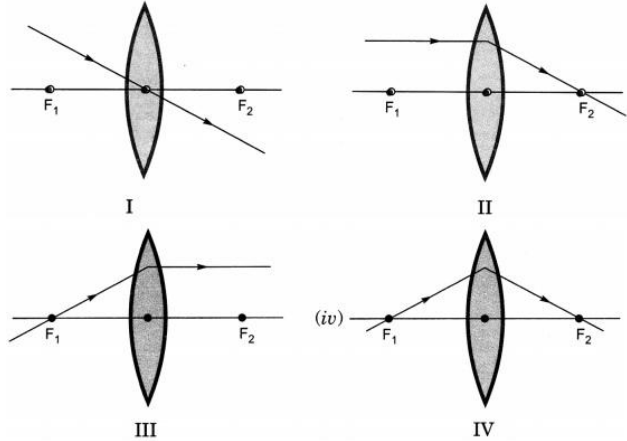
32.) Diagram Description:

A light ray enters a glass slab obliquely and emerges parallel to the incident ray but shifted sideways.

Question: The lateral displacement of the emergent ray increases when —

- A.) Thickness of slab decreases      B.) Angle of incidence decreases  
C.) Refractive index increases      D.) Wavelength increases

33.) The diagrams showing the correct path of the ray after passing through the lens:



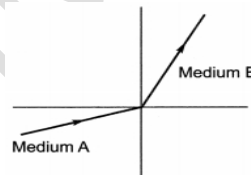
- A.) only I and II.      B.) Only III and IV      C.) I, II and III.      D.) I, II, III and IV

34.) Convex lens is also known as

- a.) converging lens      b.) diverging lens      c.) radial lens      d.) axial lens

35.) A light ray enters from medium A to medium B as shown in figure. The refractive index of medium B relative to A will be:

- A.) Greater than unity      B.) less than unity  
C.) equals to unity      D.) zero



## BIOLOGY

- The contraction and expansion movement of the walls of the food pipe is called:
 

(a) translocation      (b) transpiration      (c) peristaltic movement      (d) digestion
- Which part of nervous system controls the reflex activities of the body?
 

(a) Brain      (b) Spinal cord      (c) Cerebrum      (d) Cerebellum
- What are the products obtained by anaerobic respiration in plants?
 

(a) Lactic acid + Energy      (b) Carbon dioxide + Water + Energy  
(c) Ethanol + Carbon dioxide + Energy      (d) Pyruvate
- Which part of nephron allows the selective reabsorption of useful substances like glucose, amino acids, salts and water into the blood capillaries?
 

(a) Tubule      (b) Glomerulus      (c) Bowman's capsule      (d) Ureter
- Which of the following acts as both endocrine and exocrine gland?
 

(a) Pancreas      (b) Thyroid      (c) Adrenal      (d) Liver
- Identify the correct path of urine in the human body.
 

(a) Kidney → urinary bladder → urethra → ureter      (b) Urinary bladder → ureter → kidney → urethra  
(c) Kidney → ureter → urethra → urinary bladder      (d) Kidney → ureter → urinary bladder → urethra
- All the voluntary actions of our body are controlled by:
 

(a) cerebrum      (b) cerebellum      (c) pons      (d) medulla

8. Roots of the plants absorb water from the soil through the process of:  
 (a) diffusion (b) transpiration (c) osmosis (d) None of these
9. A diabetic patient suffers from deficiency of which hormone?  
 (a) Thyroxine (b) Testosterone (c) Oestrogen (d) Insulin
10. The procedure used for cleaning the blood of a person by separating urea from it is Called:  
 (a) osmosis (b) filtration (c) dialysis (d) double circulation
11. The use of iodised salt is recommended to prevent:  
 (a) diabetes (b) gonorrhoea (c) Dysentery (d) goitre
12. The enzyme responsible for the digestion of proteins in the small intestine is:  
 (a) Pepsin (b) Trypsin (c) Amylase (d) Lipase
13. Movement of sunflower in accordance with the path of Sun is due to  
 (a) Chemotropism (b) Geotropism (c) Phototropism (d) Hydrotropism
14. The backflow of blood during the pumping of blood by heart is prevented by:  
 (a) Walls of ventricles (b) Walls of the atrium  
 (c) Valves in the heart (d) Walls between atria and ventricles
15. Which of the following are often called glands of emergency?  
 (a) thyroid (b) pituitary (c) adrenal (d) pancreas
16. How will information travel within a neuron-  
 (a) Dendrite -> cell body -> axon -> nerve ending (b) Dendrite -> axon -> cell body -> nerve ending  
 (c) Axon -> dendrite -> cell body -> nerve ending (d) Axon -> cell body -> dendrite -> nerve ending
17. In which part of the alimentary canal food is finally digested?  
 (a) Stomach (b) Mouth cavity (c) Large intestine (d) Small intestine
18. If salivary amylase is lacking in saliva, which of the event in the mouth will be affected-  
 (a) Proteins breaking down into amino acids (b) starch breaking down into sugars  
 (c) Fats breaking down into fatty acids and glycerol (d) Absorption of vitamins
19. Which of the following glands is responsible for the regulation of metabolism?  
 (A) Thyroid gland (B) Adrenal gland (C) Pituitary gland (D) Pancreas
20. \_\_\_\_\_ is considered as the basic functional unit of the human kidney  
 (a) Exon (b) Nephron (c) Cilia (D) Neuron
21. Which of the following is responsible for the regulation of sleep-wake cycle in humans?  
 (A) Cerebrum (B) Pineal gland (C) Pituitary gland (D) Thyroid gland
22. What is the normal blood pressure of human beings?  
 (a) 110/70 (b) 120/70 (c) 120/80 (d) 110/80
23. Air is breathed through-  
 (a) Trachea — lungs — larynx — pharynx — alveoli  
 (b) Nose — larynx — pharynx — bronchus — alveoli — bronchioles  
 (c) Nostrils — pharynx — larynx — trachea — bronchi — bronchioles — alveoli  
 (d) Nose — mouth — lungs
24. In what type of environment are sulphur bacteria commonly found?  
 (a) Deep-sea vents (b) Freshwater lakes (c) Desert soils (d) rainforests
25. The gap between neurons is called:  
 (a) Dendrite (b) Synapse (c) Axon (d) Myelin sheath
26. Blood corpuscles are formed in -  
 (A) Red bone marrow (b) Haversian canal  
 (c) endosteum (d) pancreas

27. The loss of water in the form of vapour from the aerial parts of the plant is known as  
 (a) Transpiration (B) respiration (c) transportation d) none of the above
28. Response of plant roots towards water is called:  
 (a) Chemotropism (b) Phototropism  
 (c) Hydrotropism (d) Geotropism
29. The main function of abscisic acid in plants is  
 (a) to promote cell division (b) to inhibit growth  
 (c) to promote growth of stem (d) to increase the length of cells
30. Which nerves transmit impulses from the central nervous system towards muscle cells?  
 (a) Sensory nerves (b) Motor nerves (c) Relay nerves (d) Cranial nerves

## PART B

### CHEMISTRY

1. Aluminium is used for making cooking utensils. Which of the following properties of aluminium are responsible for the same?  
 (i) Good thermal conductivity (ii) Good electrical conductivity  
 (iii) Ductility (iv) High melting point  
 (a) (i) and (ii) (b) (i) and (iii) (c) (ii) and (iii) (d) (i) and (iv)
2. The poorest conductor of heat among metals is  
 (a) Lead (b) Mercury (c) Calcium (d) Sodium
3.  $\text{Al}_2\text{O}_3 + 2\text{NaOH} \rightarrow \dots + \text{H}_2\text{O}$   
 (a)  $\text{Al}(\text{OH})_3$  (b)  $\text{Na}_2\text{O}$  (c)  $\text{NaAlO}_2$  (d)  $\text{AlNaO}_2$
4. Which of the following is the correct arrangement of the given metals in ascending order of their reactivity?  
 Zinc, Iron, Magnesium, Sodium  
 (a) Zinc > Iron > Magnesium > Sodium (b) Sodium > Magnesium > Iron > Zinc  
 (c) Sodium > Zinc > Magnesium > Iron (d) Sodium > Magnesium > Zinc > Iron
5. Non-metals form covalent chlorides because  
 (a) they can give electrons to chlorine  
 (b) they can share electrons with chlorine  
 (c) they can give electrons to chlorine atoms to form chloride ions  
 (d) they cannot share electrons with chlorine atoms
6. Which of the following oxide(s) of iron would be obtained on prolonged reaction of iron with steam?  
 (a) FeO (b)  $\text{Fe}_2\text{O}_3$  (c)  $\text{Fe}_3\text{O}_4$  (d)  $\text{Fe}_2\text{O}_3$  and  $\text{Fe}_2\text{O}_4$
7. The electronic configuration of three elements X, Y and Z are as follows:  
 $X = 2, 4, Y = 2, 7, Z = 2, 1$  Which two elements will combine to form an ionic compound and write the correct formula,  
 (a)  $\text{X}_2\text{Y}$  (b)  $\text{YZ}$  (c)  $\text{XZ}_3$  (d)  $\text{Y}_2\text{Z}$
8. Example of an amphoteric oxide is:  
 (a)  $\text{Na}_2\text{O}$  (b)  $\text{K}_2\text{O}$  (c)  $\text{Al}_2\text{O}_3$  (d)  $\text{MgO}$
9. Which one among the following is an acidic oxide?  
 (a)  $\text{Na}_2\text{O}$  (b)  $\text{CO}$  (c)  $\text{CO}_2$  (d)  $\text{Al}_2\text{O}_3$
10. Oxides of moderately reactive metals like Zinc, Iron, Nickel, Tin, Copper etc. are reduced by using  
 (a) Aluminium as reducing agent (b) Sodium as reducing agent  
 (c) Carbon as reducing agent (d) Calcium as reducing agent
11. Amalgam is an alloy of  
 (a) Copper and Tin (b) Mercury (c) Lead and Tin (d) Copper and Zinc
12. Copper objects lose their shine and form green coating of  
 (a) Copper oxide (b) Copper hydroxide and Copper oxide

- (c) Basic Copper carbonate (d) Copper carbonate
13. Which of the following statements are correct for carbon compounds?  
 (i) Most carbon compounds are good conductors of electricity.  
 (ii) Most carbon compounds are poor conductors of electricity.  
 (iii) Force of attraction between molecules of carbon compounds is not very strong.  
 (iv) Force of attraction between molecules of carbon compounds is very strong.  
 (a) (ii) and (iv) (b) (ii) and (iii) (c) (i) and (iv) (d) (i) and (iii)
14. The number of isomers of pentane is  
 (a) 2 (b) 3 (c) 4 (d) 5
15. Which of the following will undergo addition reactions?  
 (a) CH<sub>4</sub> (b) C<sub>3</sub>H<sub>8</sub> (c) C<sub>2</sub>H<sub>6</sub> (d) C<sub>2</sub>H<sub>4</sub>
16. Ethanol on complete oxidation gives  
 (a) acetic acid/ethanoic acid (b) CO<sub>2</sub> and water (c) ethanal (d) acetone/ethanone
17. Which of the following will give a pleasant smell of ester when heated with ethanol and a small quantity of sulphuric acid?  
 (a) CH<sub>3</sub>COOH (b) CH<sub>3</sub>CH<sub>2</sub>OH (c) CH<sub>3</sub>OH (d) CH<sub>3</sub>CHO
18. Addition reactions are undergone by  
 (a) saturated hydrocarbons (alkanes) (b) only alkenes  
 (c) only alkynes (d) both alkenes and alkynes
19. Identify 'A' in the following reaction:  
 CH<sub>3</sub>COOH + Na<sub>2</sub>CO<sub>3</sub> → A + CO<sub>2</sub> + H<sub>2</sub>O  
 (a) CH<sub>3</sub>COONa (b) CH<sub>2</sub>(Na)COOH  
 (c) NaOH (d) NaHCO<sub>3</sub>
20. Which of the following belongs to homologous series of alkynes?  
 C<sub>6</sub>H<sub>6</sub>, C<sub>2</sub>H<sub>6</sub>, C<sub>2</sub>H<sub>4</sub>, C<sub>3</sub>H<sub>4</sub>.  
 (a) C<sub>6</sub>H<sub>6</sub> (b) C<sub>2</sub>H<sub>4</sub> (c) C<sub>2</sub>H<sub>6</sub> (d) C<sub>3</sub>H<sub>4</sub>
21. The first member of the alkyne homologous series is  
 (a) propyne (b) ethyne (c) methane (d) ethene
22. In diamond, each carbon atom is bonded to four other carbon atoms to form  
 (a) a hexagonal array (b) a rigid three-dimensional structure  
 (c) a structure in the shape of a football (d) a structure of a ring
23. soap molecule has a  
 (a) hydrophobic head and hydrophobic tail (b) hydrophobic head and hydrophilic tail  
 (c) hydrophilic head and hydrophilic tail (d) hydrophilic head and hydrophobic tail
24. The metals that float when treated with water are:  
 (a) Manganese and sodium (b) Sodium and calcium  
 (c) Magnesium and sodium (d) Magnesium and calcium
25. Pick the statement which is correct about the non-metal.  
 (a) Br is an example of a liquid non-metal.  
 (b) Graphite is a good conductor of electricity  
 (c) Most of the non-metal oxides are acidic  
 (d) All of these
26. Aqua regia is a freshly prepared mixture of concentrated HNO<sub>3</sub> and concentrated HCl in the ratio of:  
 (a) 1:3, respectively (b) 2:3, respectively (c) 3:1, respectively (d) 3:2, respectively
27. The ability of metals to be drawn into thin wire is known as  
 (a) Ductility (b) Malleability (c) Sonorousity (d) Conductivity
28. Which one of the given metals does not react with cold as well as hot water?  
 (a) Na (b) Ca (c) Mg (d) Fe
29. The bronze medals are made up of  
 (a) Cu and Zn (b) Zn and Ni (c) Cu and Sn (d) Cu, Zn, Sn
30. Silver articles become black on prolonged exposure to air. This is due to the formation of  
 (a) Ag<sub>2</sub>O (b) Ag<sub>2</sub>S (c) AgCN (d) Ag<sub>2</sub>O and Ag<sub>2</sub>S

31. During smelting, an additional substance is added which combines with impurities to form a fusible product known as  
 (a) slag (b) mud (c) gangue (d) flux
32. Which of the following are not ionic compounds?  
 (a) KCl (b) HCl (c) CCl<sub>4</sub> (d) NaCl  
 (a) (A) & (B) (b) (B) & (C) (c) (C) & (D) (d) (A) & (C)
33. Rock salt is an ore of one of the following metals. This metal is:  
 (a) Mn (b) Na (c) Fe (d) Cu
34. The metal which can be extracted from the bauxite ore is:  
 (a) Na (b) Mn (c) Al (d) Hg
35. Metal always found in a free state is  
 (a) Gold (b) Silver (c) Copper (d) Sodium

### PHYSICS

- 1.) The work done to move a unit charge from one point to another is called:  
 a) Current (b) Resistance (c) Potential difference (d) Charge
- 2.) If resistance increases, current:  
 a) Increases (b) Decreases (c) Becomes zero (d) Remains constant
- 3.) In a series circuit, total resistance is:  
 a) Less than the smallest resistor (b) Equal to the sum of individual resistances  
 c) Equal to the largest resistance (d) Zero
- 4.) In a parallel circuit, total resistance is:  
 a) More than the largest resistor (b) Equal to the sum of resistances  
 c) Less than the smallest resistance (d) Zero
- 5.) The rate of doing work in an electric circuit is called:  
 a) Electric current (b) Electric power (c) Energy (d) Resistance
- 6.) Heating effect of current is used in:  
 a) Electric bulbs (b) Electric heaters (c) Electric iron (d) All of these
- 7.) 1 kWh is the unit of:  
 a) Power (b) Energy (c) Charge (d) Current
- 8.) 1 Coulomb charge means:  
 a) 1 electron (b)  $6.25 \times 10^{18}$  electrons (c)  $3 \times 10^8$  electrons (d) 1 proton
- 9.) Which quantity remains same in a parallel circuit?  
 a) Voltage. (b) Current (c) Resistance. (d) Power
- 10.) A fuse wire is made of:  
 a) Copper (b) High resistance material  
 c) Low melting point material (d) Both b and c
- 11.) The graph between V and I for an ohmic conductor is:  
 a) Curved. (b) Straight line (c) Hyperbola. (d) Parabola
- 12.) Which of the following has highest resistance?  
 a) Thin and long wire (b) Thick and long wire  
 c) Thick and short wire (d) Thin and short wire
- 13.) Power of an electric appliance is 100 W. It means:  
 a) It consumes 100 J in 1 s (b) It consumes 100 J in 1 hr  
 c) It consumes 100 J in 1 min (d) It supplies 100 J
- 14.) A 40 W bulb works at 200 V. Resistance?  
 a) 500  $\Omega$  (b) 800  $\Omega$  (c) 1000  $\Omega$  (d) 1200  $\Omega$
- 15.) A heater of 1000 W is used for 2 hours daily. What is the cost for 30 days if each unit costs Rs. 3 ?  
 a) Rs 160 (b) Rs 180 (c) Rs 200 (d) Rs 100
- 16.) A wire of length 2 m has resistance 8  $\Omega$ . Find resistance if length becomes 6 m without change in area.  
 a) 20 ohm (b) 24 ohm (c) 28 ohm (d) 32 ohm



- 29.) The force experienced by a current carrying conductor in a magnetic field is maximum when the direction of current is:
- a) Parallel to magnetic field                      b) Perpendicular to magnetic field  
 c) Opposite to magnetic field                      d) No effect
- 30.) Iron is used in electromagnets because:
- a) It is cheap    b) It is a conductor  
 c) It loses magnetism quickly                      d) It is permanently magnetic
- 31.) Which wire is connected to the outer metallic body of an appliance?
- a) Live wire    b) Neutral wire  
 c) Earth wire    d) Fuse wire
- 32.) Short circuit happens when:
- a) Too many appliances are connected                      b) Live and neutral wires touch each other  
 c) Fuse breaks    d) Current decreases
- 33.) MCB stands for:
- a) Main Circuit Breaker                                      b) Miniature Circuit Breaker  
 c) Master Circuit Box                                      d) Magnetic Circuit Booster
- 34.) The red insulation on a wire indicates:
- a) Neutral wire    b) Earth wire  
 c) Live wire     d) Fuse wire
- 35.) Which wire completes the electrical circuit back to the supply?
- a) Live.    b) Neutral  
 c) Earth.    d) Fuse

### BIOLOGY

- 1) A feature of reproduction that is common to Amoeba, Yeast and Spirogyra is that
- (a) they reproduce asexually                      (b) they are all unicellular  
 (c) they reproduce only sexually                      (d) they are all multicellular
- 2) The ability of a cell to divide into several cells during reproduction in Plasmodium is called:
- (a) budding                      (b) multiple fission                      (c) binary fission                      (d) reduction division
- 3) Bryophyllum can be propagated vegetatively by the
- (a) stem                      (b) leaf                      (c) root                      (d) flower
- 4) Vegetative propagation refers to formation of new plants from
- (a) stem, flowers and fruits                      (b) stem, leaves and flowers  
 (c) stem, roots and flowers                      (d) stem, roots and leaves
- 5) In Rhizopus, tubular thread like structures bearing sporangia at their tips are called
- (a) filaments                      (b) hyphae                      (c) rhizoids                      (d) roots
- 6) The seed that contains the future plant is called the:
- (a) cotyledons                      (b) seed coat                      (c) germ cells                      (d) embryo
- 7) The process of release of eggs from the ovary is called:
- (a) menstruation                      (b) reproduction                      (c) insemination                      (d) ovulation
- 8) The period during adolescence when the reproductive tissues begin to mature is called:
- (a) ovulation                      (b) puberty                      (c) germination                      (d) propagation
- 9) In human beings, the fertilization occurs in the
- (a) uterus                      (b) ovaries                      (c) fallopian tubes                      (d) vagina
- 10) The embryo in humans gets nutrition from the mother's blood with the help of a special tissue called
- (a) Placenta                      (b) Villi                      (c) Uterus                      (d) Womb
- 11) Which among the following diseases is not sexually transmitted?
- (a) Syphilis                      (b) Hepatitis                      (c) HIV-AIDS                      (d) Gonorrhoea
- 12) Which of the following is the correct sequence of events of sexual reproduction in a flower?
- (a) pollination, fertilisation, seedling, embryo                      (b) seedling, embryo, fertilisation, pollination  
 (c) pollination, fertilisation, embryo, seedling                      (d) embryo, seedling, pollination, fertilisation
- 13) Characters that are transmitted from parents to offspring during reproduction show

- (a) only similarities with parents  
 (b) only variations with parents  
 (c) both similarities and variations with parents  
 (d) neither similarities nor variations
- 14) The male reproductive parts of a flower, the stamens, are collectively known as  
 (a) Androecium      b) Filament      c) Anther      d) Gynoecium
- 15) The process in which small portions of the oviducts of a woman are removed by surgical operation, and the cut ends are ligated is:  
 a) Copper T      b) Tubectomy      c) Vasectomy      d) Diaphragm
- 16) Mendel conducted his famous breeding experiments by working on the following:  
 a) Drosophila      (b) Escherichia Coli      (c) Pisum sativum      (d) All of these
- 17) A zygote which has an X chromosome inherited from the father will develop into a:  
 a) boy      (b) girl  
 (c) X chromosome does not determine the sex of a child (d) either boy or girl
- 18) Exchange of genetic material takes place in:  
 a) Vegetative reproduction      (b) Asexual reproduction  
 (c) Sexual reproduction      (d) Budding
- 19) Which one of Mendel's law states that when two homozygous individuals with one or more sets of contrasting characteristics are crossed, the characteristics which appear in F1 hybrids are dominant and those which do not are recessive?  
 (a) Law of segregation      (b) Law of dominance      (c) Law of independent assortment      (d) None of these
- 20) Who among the following is considered as the father of Genetics?  
 (a) Mendel      (b) Morgan      (c) Sutton      (d) Boveri
- 21) A trait in an organism is influenced by  
 paternal DNA only (b) maternal DNA only (c) both maternal and paternal DNA (d) neither by paternal nor by maternal DNA
- 22) The flower of the Hibiscus plant is  
 a) bisexual      (b) unisexual      (c) neuter      (d) very small
- 23) Spirogyra reproduce by  
 (a) budding      (b) fragmentation      (c) regeneration      (d) fission
- 24) In human males, the testes lie in the scrotum, because it helps in the  
 (a) process of mating      (b) formation of sperms (c) easy transfer of gametes      (d) secretion of estrogen
- 25) Hydra usually reproduces by:  
 (a) fragmentation and budding      (b) regeneration and budding  
 (c) multiple fission and fragmentation      (d) regeneration
- 26) From the list given below, select the character which can be acquired but not inherited:  
 (a) Colour of eyes      (b) Colour of skin  
 (c) Texture of Hair      (d) Size of Body
- 27) In humans if gene 'B' gives brown eyes and gene 'b' gives blue eyes, what will be the colour of eyes of the person having combination. i) Bb      ii) BB :  
 (a) i) Brown      ii) Brown      (b) ) i) Blue      ii) Blue  
 (c) ) i) Blue      ii) Brown      (d) ) i) Brownii) Blue
- 28) The amount of energy that flows from one traffic level to another in a food chain is:  
 (a) 5%      (b) 10%  
 (c) 20%      (d) 15%
- 29) The primary consumers are:  
 (a) Carnivores      (b) Herbivores  
 (c) Omnivores      (d) Producers
- 30) The biotic component of an ecosystem consists of  
 (a) Plants and Animals      (b) Algae and Fungi  
 (c) Producers, Consumers and Decomposers      (d) Air, Water, Soil

**10TH CLASS SCIENCE MCQ ANSWER KEY**

PART A										PART B									
CHEMISTRY										CHEMISTRY									
1	b	26	a	15	a	4	a	29	b	1	d	26	a	15	b	4	d	29	b
2	c	27	a	16	c	5	a	30	b	2	a	27	a	16	b	5	b	30	c
3	a	28	d	17	b	6	d			3	c	28	d	17	b	6	d		
4	a,d	29	c	18	a	7	d			4	d	29	c	18	b	7	d		
5	b,c	30	c	19	b	8	a			5	b	30	b	19	a	8	b		
6	d	31	b	20	c	9	d			6	c	31	d	20	c	9	c		
7	a	32	b	21	c	10	c			7	b	32	b	21	a	10	a		
8	b	33	b	22	b	11	d			8	c	33	b	22	b	11	b		
9	c	34	c	23	c	12	b			9	c	34	c	23	b	12	c		
10	d	35	c	24	c	13	c			10	a	35	a	24	c	13	c		
11	c	PHYSICS		25	a	14	c			11	b	PHYSICS		25	b	14	a		
12	c	1	d	26	a	15	c			12	c	1	c	26	c	15	b		
13	a	2	a	27	c	16	a			13	a	2	b	27	a	16	c		
14	a	3	c	28	b	17	d			14	b	3	b	28	c	17	b		
15	d	4	a	29	a	18	b			15	d	4	c	29	b	18	c		
16	b	5	a	30	b	19	a			16	a	5	b	30	c	19	b		
17	b	6	d	31	b	20	b			17	a	6	d	31	c	20	a		
18	d	7	c	32	c	21	b			18	d	7	b	32	b	21	c		
19	c	8	c	33	c	22	c			19	a	8	b	33	b	22	a		
20	a	9	c	34	a	23	c			20	d	9	a	34	c	23	b		
21	d	10	b	35	a	24	a			21	b	10	d	35	b	24	b		
22	d	11	b	BIOLOGY		25	b			22	b	11	b	BIOLOGY		25	b		
23	d	12	b	1	c	26	a			23	d	12	a	1	a	26	d		
24	a	13	a	2	d	27	a			24	d	13	a	2	b	27	a		
25	a	14	b	3	d	28	d			25	d	14	c	3	b	28	b		