

Sample Paper

9

Time : 90 Minutes

Max. Marks : 40

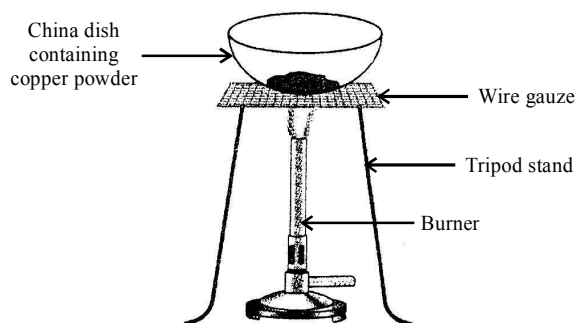
General Instructions

1. The Question Paper contains three sections.
2. Section A has 24 questions. Attempt any 20 questions.
3. Section B has 24 questions. Attempt any 20 questions.
4. Section C has 12 questions. Attempt any 10 questions.
5. All questions carry equal marks.
6. There is no negative marking.

SECTION-A

Section – A consists of 24 questions. Attempt **any 20** questions from this section. The first attempted 20 questions would be evaluated.

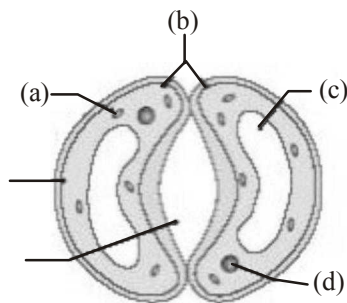
1. The following substances are arranged in the decreasing order of their pH values. The correct option is
A. Tomato juice B. Tooth paste C. Saliva (after meals) D. Coffee
E. Blood
(a) B C E A D
(b) B E C D A
(c) B A C E D
(d) B D E C A
2. On reacting a compound of calcium (X) with water, compound (Y) is obtained. (Y) on boiling with NH_4Cl a gas (Z) is obtained. X, Y and Z respectively, are:
(a) CaCO_3 , CaO , NH_3 (b) CaCO_3 , CaO , Cl_2 (c) CaO , CaCl_2 , Cl_2 (d) CaO , $\text{Ca}(\text{OH})_2$, NH_3
3. Observe this experiment carefully :



In above experiment copper powder turned to black coloured product on heating. It is due to the reason that:

- (a) Copper has absorbed heat
- (b) Copper (II) oxide is formed
- (c) Copper (I) oxide is formed
- (d) Both (a) & (c) are correct

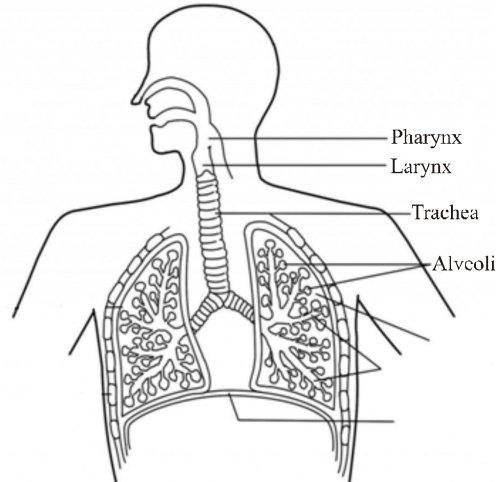
4. Consider the following statements.
- Baking soda is an acidic salt whereas washing soda is a basic salt.
 - The aqueous solution of common salt does not change the colour of either red litmus solution or blue litmus solution.
 - Amla tastes sour whereas soap solution is bitter in taste.
 - The water extract of spinach does not change the colour of blue litmus solution.
- Which alternative has the correct statements?
- (a) A, B and C (b) A and C (c) B and C (d) B and D
5. A highly reactive element (X) reacts with oxygen of air even at room temperature to give an oxide (Y). The oxide (Y) is soluble in water. The aqueous solution of (Y) does not change the colour of red litmus solution but reacts with an aqueous solution of sodium hydroxide. The (X) is
- (a) sodium (b) phosphorus (c) carbon (d) sulphur
6. In the balanced chemical equation :
- (p) lead nitrate + (q) aluminium chloride \rightarrow (r) aluminium nitrate + (s) lead chloride
- Which of the following alternative is correct?
- (a) p = 1, q = 2, r = 2, s = 1 (b) p = 4, q = 3, r = 3, s = 4
(c) p = 2, q = 3, r = 2, s = 3 (d) p = 3, q = 2, r = 2, s = 3
7. Consider the following statements :
- Bee stings contain ethanoic acid.
 - The white enamel on our teeth is made up of calcium sulphate.
 - Acidic nature of a substance is due to the formation of $H^+(aq)$ ions in solution.
- Which of these statement(s) is/are correct ?
- (a) A and B (b) A and C (c) Only C (d) Only B
8. Consider the following statements :
- Non-metals have properties same to that of metals.
 - In the activity series the elements Fe, Al, Zn are in the order $Fe < Al < Zn$.
- Which of these statement(s) is/are correct?
- (a) (i) only (b) (ii) only (c) Both (i) and (ii) (d) Neither (i) nor (ii)
9. In an experiment to prepare a compound using iron filings and sulphur powder, the teacher instructed the students not to heat the mixture of iron and sulphur without test-tube holder because :
- the reaction between iron and sulphur is exothermic
 - the reaction between iron and sulphur is endothermic
 - the test-tube is likely to melt
 - the reaction is explosive
10. The turmeric solution will turn red by an aqueous solution of -
- (a) potassium acetate (b) copper sulphate (c) sodium sulphate (d) ferric chloride
11. Given below is diagram of stomatal apparatus. Label the correct organelle.



- (a) a-chloroplast, b-guard cell, c-vacuole, d-nucleus
(b) a-vacuole, b-guard cell, c-chloroplast, d-nucleus

- (c) a-nucleus, b-chloroplast, c-guard cell, d-chloroplast
- (d) a-chloroplast, b-guard cell, c-nucleus, d-vacuole

12. Identify the incorrect labelled part with it's function



- (a) Pharynx – common passage for food and air.
 - (b) Larynx– helps in sound production
 - (c) Trachea– also called wind pipe
 - (d) Alveoli–prevent the entry of food into the larynx
13. Stomatal movement is affected by
- (a) Light, Temperature and CO₂
 - (b) Light, Temperature and O₂
 - (c) Light, CO₂ and O₂
 - (d) Light, water and CO₂
14. Select the correct label with it's function

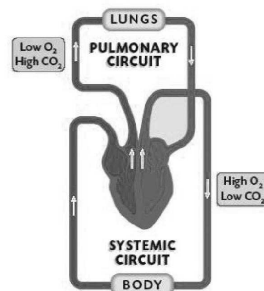
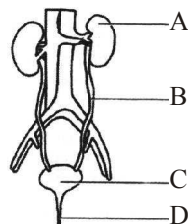


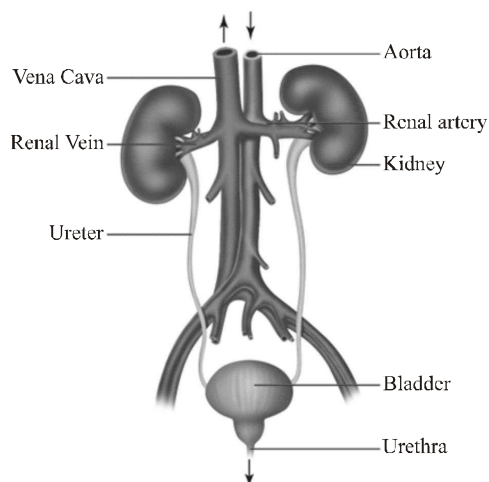
Fig. Diagrammatic representation of double circulation in Human being

- (a) Systemic circulation – Supply oxygenated blood to all parts of the body through arteries
 - (b) Pulmonary circulation – Circulation of blood only in the lungs for purification of blood
 - (c) Double circulation – Blood passes once through the heart
 - (d) Systemic circulation – Supply deoxygenated blood to all parts of the body through veins.
15. The diagram below represents a group of organs in the human body. Urine leaves the urinary bladder by passing through this structure labelled



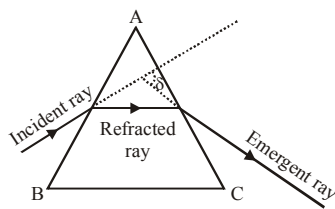
- (a) A
- (b) B
- (c) C
- (d) D

16. Match the function given in column-I with their respective structure given in column-II and select the correct option given below:



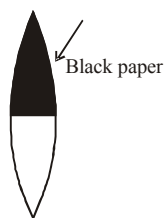
Column-I (Function)	Column-II (Part of Excretory system)		
A. Tubulav filtration	I. Renal vein		
B. Filtered blood	II. Ureter		
C. Transport of urine	III. Urinary bladder		
D. Storage of urine	IV. Kidney		
(a) A-IV; B-V; C-II; D-III	(b) A-IV; B-I; C-II; D-III	(c) A-V; B-IV; C-I; D-III	(d) A-V; B-IV; C-I; D-II

17. The field of view is maximum for
 (a) plane mirror (b) concave mirror (c) convex mirror (d) cylindrical mirror
18. An object placed between F and 2F of a convex lens will produce an image
 (a) beyond 2F (b) enlarged (c) real and inverted (d) All of these
19. A ray of light passes through a prism as shown in the figure given below.



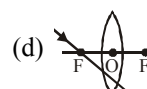
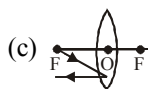
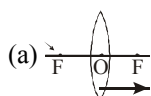
The angle δ is known as

- (a) angle of deviation (b) angle of dispersion (c) angle of emergence (d) angle of refraction
20. A virtual image larger than the object can be produced by
 (a) Convex mirror (b) Concave lens (c) Concave mirror (d) Plane mirror
21. How will the image formed by a convex lens be affected if the upper half of the lens is wrapped with a black paper?



- (a) The size of the image is reduced to one-half (b) The upper half of the image will be absent
- (c) The brightness of the image is reduced (d) There will be no effect

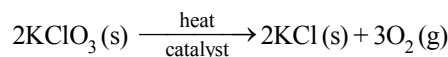
22. For an incident ray directed towards centre of curvature of a spherical mirror the reflected ray
 (a) retraces its path (b) passes through focus
 (c) passes through the pole (d) becomes parallel to the principal axis
23. When a ray of light passes from an optically denser medium to a rarer medium, it
 (a) goes undeviated (b) bends away from the normal
 (c) bends towards the normal (d) None of these
24. Which of the following ray diagrams is correct for the ray of light incident on a lens shown in Fig ?



SECTION-B

Section – B consists of 24 questions (Sl. No.25 to 48). Attempt **any 20** questions from this section. The first attempted 20 questions would be evaluated.

25. Choose the incorrect pair
 (a) NO - Neutral oxide (b) Cl_2O_7 - Acidic oxide (c) MgO - Basic Oxide (d) P_4O_{10} - Basic oxide
26. The following reaction is used for the preparation of oxygen gas in the laboratory



Which of the following statement(s) is (are) correct about the reaction?

- (a) It is a decomposition reaction and endothermic in nature.
 (b) It is a combination reaction.
 (c) It is a decomposition reaction and accompanied by release of heat.
 (d) It is a photochemical decomposition reaction and exothermic in nature.
27. When a little sulphur in a spoon is heated, it burns with a blue flame which slowly disappears after some time and we can feel a pungent odour. This pungent odour is due to
 (a) carbon dioxide (b) sulphur dioxide (c) sulphur gas (d) sulphuric acid
28. Consider the following statements :
 (i) Metals can form positive ions by losing electrons to non-metals.
 (ii) Different metals have same reactivities with water and dilute acids.
 (iii) A more reactive metal displaces a less reactive metal from its salt solution.
 Which of these statement(s) is/are correct?
 (a) (i) and (ii) (b) (i) and (iii) (c) (ii) and (iii) (d) All are correct
29. Two test tubes 'A' and 'B' contain aqueous solution of potassium iodide and lead nitrate separately. When these two test-tubes 'A' and 'B' are mixed to each other, results into 'X' and 'Y'. The 'X' and 'Y' are:
 (a) Yellow ppt, yellow solution (b) Yellow ppt, colourless solution
 (c) White ppt, yellow solution (d) White ppt, colourless solution
30. Which of the following is spread on icy roads to melt ice in cold countries?
 (a) Sodium bicarbonate (b) Rock salt (c) Sodium hydroxide (d) None of these

Question No. 31 to 35 consist of two statements-Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:

- (a) Both A and R are true and R is the correct explanation of A.
 (b) Both A and R are true and R is not the correct explanation of A.
 (c) A is true but R is false.
 (d) A is false but R is true.

31. **Assertion:** Potassium oxide is a basic oxide.

Reason: Solution of potassium oxide in water turns red litmus blue.

32. **Assertion :** A reducing agent is a substance which can either accept electron.

Reason : A substance which helps in oxidation is known as reducing agent.

33. **Assertion:** Chloroplast help in photosynthesis

Reason: Mithochondria have enzymes for dark reaction

34. **Assertion :** Light bends from its path, when it goes from one medium to another medium.

Reason : Speed of light changes, when it goes from one medium to another medium.

35. **Assertion :** In water, Hydrochloric acid behaves as a weak monobasic acid.

Reason : In water, Hydrochloric acid acts as a proton donor.

36. Excretory units in flatworms are

- (a) nephron (b) flame cells (c) contractile vacuole (d) osculum

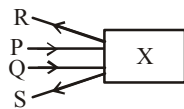
37. The back flow of blood during the pumping of blood by heart is prevented by

- (a) Walls of atrium (b) Valves in heart
 (c) Walls btween atria and ventricles (d) Walls of ventricles

38. Select the incorrect statement

- (a) Larynx prevents indigested solids and liquids from entering the respiratory system
 (b) Larynx is also called Adam's apple in human males.
 (c) The rings of cartilage makes the wall collapsible.
 (d) No. of alveoli is 300–400 million with surface area of 100 sqm.

39. Two light rays P and Q are incident an optical device 'X' which finally goes along 'R' and 'S', identify optical device 'X'.



- (a) Concave lens (b) Concave mirror (c) Convex lens (d) Convex mirror

40. A printed page is seen through a glass slab place on it. The printed words appear raised. This is due to

- (a) refraction at the upper surface of the slab (b) refraction at the lower surface of the slab
 (c) partial reflection at the upper surface of the slab (d) partial reflection at the lower surface of the slab

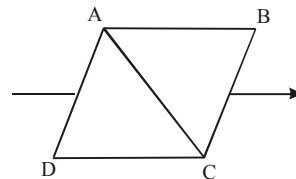
41. In which of the following vertebrate group/groups, heart does not pump oxygenated blood to different parts of the body?

- (a) Pisces and amphibians (b) Amphibians and reptles
 (c) Amphibians only (d) Pisces only

42. Lack of oxygen in muclees often leads to cramps among cricketers. This results due to

- (a) Conversion of pyruvate to ethanol (b) Coverision of pyruvate to glucose
 (c) Non-conversion of glucose to pyruvate (d) Conversion of pyruvate to lactic acid

43. The refractive index of water is 1.33. What will be speed of light in water ?
 (a) 3×10^8 m/s (b) 2.25×10^8 m/s (c) 4×10^8 m/s (d) 1.33×10^8 m/s
44. On passing through a prism, a parallel beam of sunlight splits into lights of several colours. Take a combination of two identical prisms as shown below. A parallel beam of sunlight is incident on the face AD. The emergent light from the face BC, consists of
 (a) a parallel beam of light of several colours
 (b) a divergent beam of lights of several colours.
 (c) a parallel beam of white light
 (d) a divergent beam of white light.
45. A concave mirror of focal length f produces an image n times the size of object. If image is real, then distance of object from mirror, is
 (a) $(n-1)f$ (b) $\{(n-1)/n\}f$ (c) $\{(n+1)/n\}f$ (d) $(n+1)f$
46. Consider the following statements:
 (A) The focal length of a spherical mirror has a smaller magnitude than that of its radius of curvature.
 (B) A spherical mirror cannot form an image whose size is the same as that of the object.
 (C) A ray of light incident parallel to the principal axis of a spherical mirror retraces its path after reflection.
 Which of these statement(s) is/are correct ?
 (a) (A) and (B) (b) (A) and (C) (c) Only (A) (d) Only (C)
47. Snell's law is defined as
 (a) $\frac{\sin i}{\sin r} = {}^1\mu_2$ (b) $\frac{\sin r}{\sin i} = {}^1\mu_2$ (c) $\frac{\sin i}{\sin r} = {}^2\mu_1$ (d) $\frac{1}{\sin i} = \mu$
48. Which of the following is not correctly matched



Column-I		Column-II
(a)	Malleable metal	gold
(b)	Low density metal	sodium
(c)	Most common metal used for making electrical wires	Silver
(d)	Liquid metal	mercury

SECTION-C

Section – C consists of three Cases followed by questions. There are a total of 12 questions in this section. Attempt any 10 questions from this section. The first attempted 10 questions would be evaluated.

Case-I

Chemical reactions involve the breaking and making of bonds between atoms to produce new substances. during a chemical reaction atoms of one element do not change into those of another element. Nor do atoms disappear from the mixture or appear from elsewhere. There are certain types of reactions. Reactions in which a single product is formed from two or more reactants is known as a combination reaction. Decomposition reactions are the reactions in which a compound breaks down into simpler compounds. Displacement and double displacement reactions are the one in which an atom or group of atom is replaced by another. Another type of reaction is redox reactions in which simultaneous oxidation and reduction takes place.

49. Which of the following reactions involved the combination of two element ?
 (a) $\text{CaO} + \text{CO}_2 \rightarrow \text{CaCO}_2$ (b) $4\text{Na} + \text{O}_2 \rightarrow 2\text{Na}_2\text{O}$
 (c) $\text{SO}_2 + \frac{1}{2}\text{O}_2 \rightarrow \text{SO}_3$ (d) $\text{NH}_3 + \text{HCl} \rightarrow \text{NH}_4\text{Cl}$

50. Consider the reaction $\text{Fe}_2\text{O}_3 + 2\text{Al} \rightarrow \text{Al}_2\text{O}_3 + 2\text{Fe}$
The above reaction is an example of
- (a) combination reaction (b) double displacement reaction
(c) decomposition reaction (d) simple displacement reaction
51. The equation $\text{Mg}(s) + \text{CuO}(s) \rightarrow \text{MgO}(s) + \text{Cu}(s)$ represents
- (i) decomposition reaction (ii) displacement reaction
(iii) combination reaction (iv) double displacement reaction
(v) redox reaction
- (a) (i) and (ii) (b) (iii) and (iv) (c) (ii) and (v) (d) (iv) and (v)
52. Which of the following is a decomposition reaction?
- (a) $2\text{HgO} \xrightarrow{\text{heat}} 2\text{Hg} + \text{O}_2$ (b) $\text{CaCO}_3 \xrightarrow{\text{heat}} \text{CaO} + \text{CO}_2$
(c) $2\text{H}_2\text{O} \xrightarrow{\text{electrolysis}} \text{H}_2 + \text{O}_2$ (d) All of these

Case-II

A student performed an experiment to study the activity of salivary amylase. He added 1 ml starch solution (1%) in two test tubes with 1 ml saliva in it. Left the test tubes undisturbed for 15-20 mins. Then added a few drops of Iodine solution to both the test tubes. One test tube gives blue-black colour while the other does not.

53. Which of the following digestive enzyme is found in saliva?
- (a) Mucin (b) Secretin (c) Salivary amylase (d) Pepsin
54. The optimum pH for salivary amylase is
- (a) 2.0–7.5 (b) 6.6–6.8 (c) 7.9 (d) 8.6
55. Addition of Iodine solution to the test-tube gives
- (a) green colour (b) black colour (c) blue-black colour (d) blue colour
56. In the stomach, the salivary amylase is not functioning why?
- (a) pH of stomach more than 6. (b) stomach is highly acidic
(c) Digestion of starch is not happening in stomach (d) stomach is highly basic

Case-III

The bending of light ray from its path in passing from one medium to the other medium is called refraction of light. If the refracted ray bends towards the normal relative to incident ray, then the second medium is denser than the first medium. But if the refracted ray bend away from the normal then second medium is rarer than the first medium.

57. The refractive index of water is $\frac{4}{3}$ and of glass is $\frac{3}{2}$. The refractive index of glass with respect to water.
- (a) $\frac{9}{8}$ (b) $\frac{8}{9}$ (c) $\frac{6}{7}$ (d) $\frac{7}{6}$
58. The refraction of light is not possible when
- (i) The angle of incidence is 30° .
(ii) When two medium has same refractive index.
(iii) When refractive index is higher than 2
- (a) only I is correct (b) only II is correct (c) only II and III is correct (d) only I and III is correct
59. The angle of incidence in air for a ray of light is 40° . If ray travels through water of refractive index $\frac{4}{3}$, find angle of refraction.
- (a) 22.82° (b) 28.82° (c) 36.52° (d) 49.72°
60. Light reflected from a fish strikes the surface of the water at an angle of 38° to the normal. What is the angle of refraction of the light into the air?
- (a) 35° (b) 45° (c) 55° (d) 60°