# Sample Paper

8

**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.** Which of the following flower petals can be used as an indicator

(1) Petunia (2) Hydrangea (3) Geranium (4) Cabbage

(5) Hibiscus

(a) 1,2,4 (b) 2,3,5 (c) 1,2,4,5 (d) 1,2,3,4

**2.** The correct order of increasing chemical reactivity is –

(a) Zn < Fe < Mg < K (b) Fe < Mg < Zn < K (c) Fe < Mg < K < Zn (d) Fe < Zn < Mg < K

**3.** Which of the following is a redox reaction(s)?

(a) $BaCl_2 + H_2SO_4 \rightarrow BaSO_4 + 2HCl$ (b) $H_2SO_4 + 2NaOH \rightarrow 2Na_2SO_4 + 2H_2O$

(c) $CH_3COOH + C_2H_5OH \rightarrow CH_3COOC_2H_5 + H_2O$ (d) $2FeCl_3 + SnCl_2 \rightarrow 2FeCl_2 + SnCl_4$

**4.** The pH of soil X is 7.5 while that of soil Y is 4.5. Which of the two solil, should be treated with powdered chalk to adjust its pH?

(a) X only (b) Y only (c) Both X and Y (d) none of these

**5.** The elements preserved in kerosere and water respectively are

(a) Ca, Na (b) A1, P (c) Na, P (d) Hg, Br

**6.** Which of the following is an exothermic reation?

(a) Decomposition of AgCl in light

(b) Dissolution of amononium chloride

(c) Diisolution of $H_2SO_4$ in water

(d) Electrolysis of water

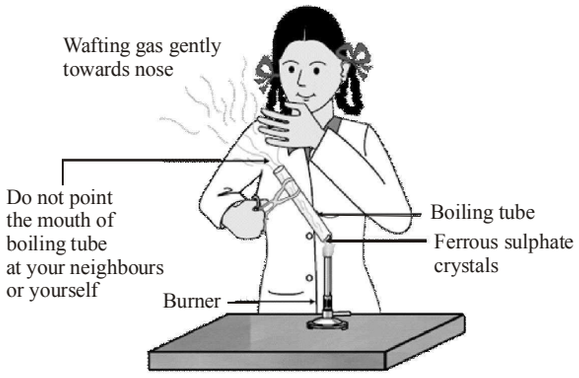
**7.** Antacids contain –

(a) weak base (b) weak acid (c) strong base (d) strong acid

**8.** $Al_2O_3$ reacts with

(a) only water (b) only acids (c) only alkalis (d) both acids and alkalis

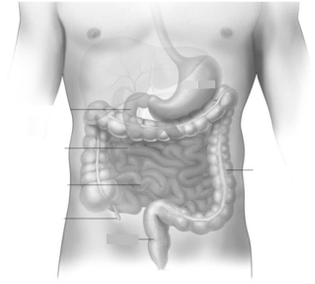
**9.** Which of the following observations made by her is incorrect?




(a) The coloured crystals changes from light green to white.
(b) Ferous sulphate crystals lose water of crystallisation to form anhydrous ferrous sulphate.
(c) Anhydrous ferrous sulphate decomposes to from one solid and one gaseous product.
(d) The gaseous products are acidic in nature.

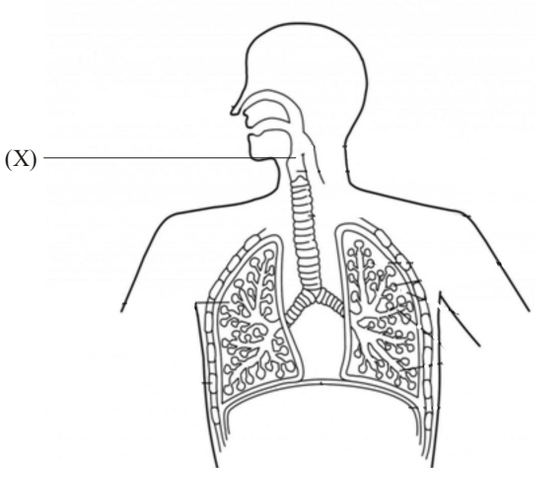
**10.** Plaster of paris is made from –
(a) lime stone (b) slaked lime (c) quick lime (d) gypsum

**11.** The given figure shows a section of small intestine. What is the function of structure marked as I in the given figure.



(a) Duodenum - Proximal part of small Intestine.
(b) Jejunum - bear finger like projections called villi.
(c) Ileum -Club-shaped Villi
(d) Villi - Transport fats

**12.** Identify the given diagram of human respiratory system. What is the function of structure marked as X?

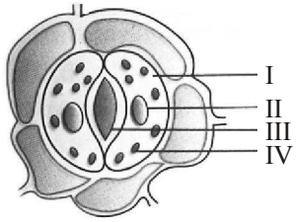



(a) To prevent food from entering in to trachea.
(b) To filter & warm the air
(c) To help in exchange of gases
(d) To catch dust & bacteria.

**13.** During deficiency of oxygen in tissues of human beings, pyruvic acid is converted into lactic acid in the

(a) cytoplasm (b) chloroplast (c) mitochondria (d) golgi body

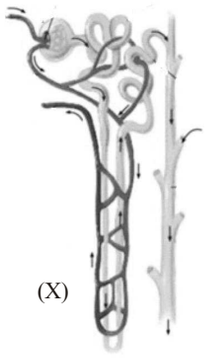
**14.** In the following sketch of stomatal apparatus, parts I, II, III and IV were labelled differently by four students. The correct labelling is:




(a) I-guard cell, II-stroma, III-starch granule, IV-nucleus (b) I-cytoplasm II-nucleus, III-stroma, IV-chloroplast

(c) I-guard cell, II-starch, III-nucleus, IV-stroma (d) I-cytoplasm, II-chloroplast, III-stroma, IV-nucleus

**15.** The label X represents _____ that function in _____.



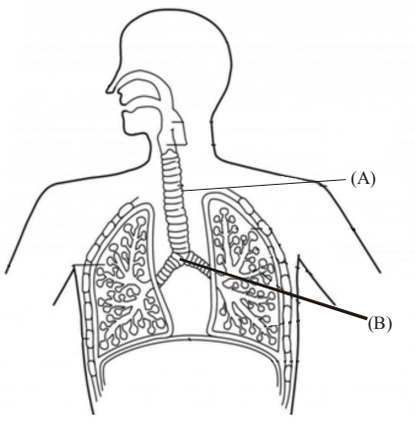

(a) vasa recta -Reabsorption of water, minerals & digestive end products.

(b) Henle's loop - Filtration of plasma leaving the blood.

(c) vasa recta - Filtration of plasma leaving the blood.

(d) Henle's loop - Reabsorption of water minerals and digestive end products.

**16.** In the given figure, label A represents _____ while label B represents _____.




(a) A - Trachea, B - Bronchus (b) A - Alveolus, B - Bronchiole

(c) A - Bronchiole, B - Trachea (d) A - Trachea, B - Bronchiole

**17.** For reflection through spherical surfaces, the normal at the point of incidence is
(a) perpendicular to the principle axis and passes through the centre of curvature
(b) perpendicular to the focal plane and passes through the pole.
(c) perpendicular to the tangent plane at pole and passes through the focus.
(d) perpendicular to the tangent plane at the point of incidence and passes through the centre of curvature.

**18.** Under which of the following conditions a concave mirror can form an image larger than the actual object?
(a) When the object is kept at a distance equal to its radius of curvature
(b) When object is kept at a distance less than its focal length
(c) When object is placed between the focus and centre of curvature
(d) When object is kept at a distance greater than its radius of curvature

**19.** According to the laws of reflection
(a) angle i = angle r (b) sin i = sin r (c) sin i / sin r = constant (d) All of these

**20.** An inverted image can be seen in a convex mirror,
(a) under no circumstances
(b) when the object is very far from the mirror
(c) when the object is at a distance equal to the radius of curvature of the mirror
(d) when the distance of the object from the mirror is equal to the focal length of the mirror

**21.** Which of the follow ing figures correctly shows the bending of a monochromatic light inside the prism?

(a)  (b)  (c)  (d) 

**22.** The distance between a spherical lens and the image is – 15 cm. The lens is
(a) concave lens (b) convex lens
(c) either of the two irrespective of the object distance (d) either concave lens or convex lens with object between O and F.

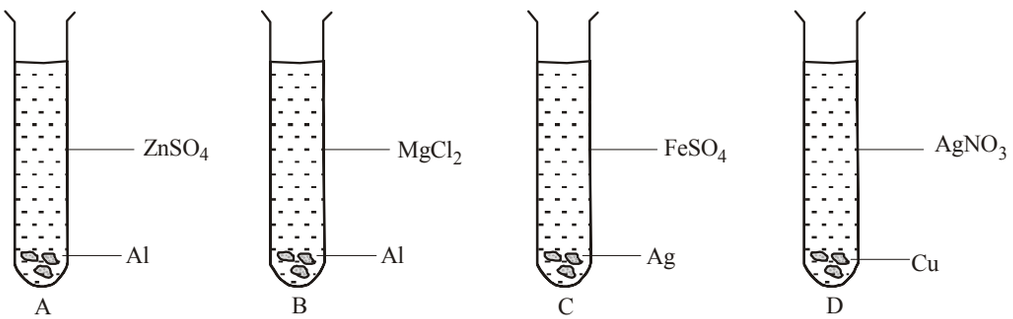
**23.** You are given water, mustard oil, glycerine and kerosene. In which of these media a ray of light incident obliquely at same angle would bend the most?
(a) Kerosene (b) Water (c) Mustard oil (d) Glycerine

**24.** A real and enlarged image can be formed by using a
(a) convex mirror (b) plane mirror
(c) concave mirror (d) either convex or a plane mirror

## 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.** Which of the following will give displacement reactions?




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

**26.** When copper powder is heated it gets coated with –

(a) black copper oxide (b) yellow copper oxide (c) red copper oxide (d) None of these

**27.** Common salt can also be used as the raw material for making

(i) washing soda (ii) bleaching powder

(iii) baking soda (iv) slaked lime

(a) (i) and (ii) (b) (i), (ii) and (iv) (c) (i) and (iii) (d) (i), (iii) and (iv)

**28.** The metal that reacts with hot water is –

(a) mercury (b) magnesium (c) zinc (d) copper

**29.** Take about 1.0g $CaCO_3$ in a test tube. Heat it over a flame, a colourless gas comes out. The reaction is called a

(a) decomposition reaction (b) displacement reaction

(c) double decomposition reaction (d) double displacement reaction

**30.** Which of the following is not a mineral acid?

(a) Hydrochloric acid (b) Citric acid (c) Sulphuric acid (d) Nitric acid

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*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.*

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**31.** **Assertion:** Mostly Metals do not read with $HNO_3$.

**Reason:** $HNO_3$ oxidises $H_2$ product to water and itself gets reduced to any of the nitrogen oxides.

**32.** **Assertion :** $Mg(s) + F_2(s) \rightarrow MgF_2(s)$,
magnesium loses electrons and acts as a reducing agent.

**Reason :** Reduction in general means acceptance of electron(s) by a reactant.

**33.** **Assertion:** Photorespiration decreases net photosynthesis.

**Reason:** Rate of respiration in dark and light is almost same in all plants.

**34** **Assertion :** A point object is placed at a distance of 26 cm from a convex mirror of focal length 26 cm. The image will not form at infinity.

**Reason :** For above given system the equation $\frac{1}{u}+\frac{1}{v}=\frac{1}{f}$ gives $v = \infty$.

**35.** **Assertion :** Sodium hydrogen carbonate is used in fire extinguisher.

**Reason :** Sodium hydrogen carbonate is a mild base.

**36.** The carbon dioxide is transported *via* blood to lungs as

(a) dissolved in blood plasma only. (b) in the form of carbonic acid only.

(c) in combination with haemoglobin only. (d) carbaminohaemoglobin and as carbonic acid.

**37.** Which of the following is the correct order for the flow of food from mouth to anus?

(a) Oesophagus → Stomach → Small Intestine → Large Intestine

(b) Large Intestine → Oesophagus → Stomach → Small Intestine

(c) Stomach → Small Intestine → Large Intestine→ Oesophagus

(d) Small Intestine → Large Intestine→ Oesophagus → Stomach

**38.** Select the incorrect statement

(a) RBC's are produced by bone marrow and have a lifespan of 2 weeks only.

(b) RBC's are important for transport of gases

(c) RBC contain haemoglobin that gives red colour to the blood.

(d) RbC's ae biconcave in shape.

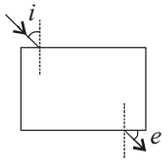
**39.** Which of the following phenomena of light are involved in the formation of a rainbow?
(a) Reflection, refraction and dispersion (b) Refraction, dispersion and total internal reflection
(c) Refraction, dispersion and internal reflection (d) Dispersion, scattering and total internal reflection

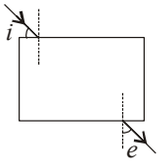
**40.** The stars in the sky appear twinking due to
(a) Reflection of light (b) Atmospheric diffraction
(c) Atmospheric refration (d) None of the above

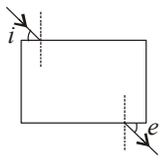
**41.** Which of the following group of animals have an incomplete duble circulation systems.
(a) Frog and Crocodile (b) Shark and Whale (c) Lizard and Pigeon (d) Toad and Lizard.

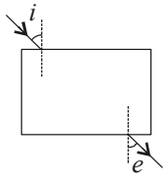
**42.** Tricuspid valve is present in
(a) Right atria and right ventricle (b) Left atria and left ventricle
(c) Wall of atrium (d) Wall of vetricle

**43.** A student does the experiment on tracing the path of a ray of light passing through a rectangular glass slab for different angles of incidence. He can get a correct measure of the angles of incidence and angle of emergence by following the labelling indicated in figure.

(a) 

(b) 

(c) 

(d) 


**44.** When a lens of focal length f is cut in two pieces transversly, the focal length of each part will become
(a) twice (b) thrice (c) half (d) infinite

**45.** Which of the following does a Dentist use to view the teeth for treatment?
(a) Concave Mirror (b) Convex lens (c) Concave lens (d) Convex Mirror

**46.** Placement of another identical prism in an inverted position with respect to the first and allowing the colours of spectrum to pass through it will
(a) change the spectrum into white light (b) change the spectrum into a black band
(c) keep the spectrum as before (d) split into more colours

**47.** Consider the following statements:
(a) The laws of reflection are valid for plane mirrors and not for spherical mirrors.
(b) A real image of a point object can be formed only by a concave mirror.
Which of these statement(s) is/are correct?
(a) (a) only (b) (b) only (c) Both (a) and (b) (d) Neither (a) nor (b)

**48.** Reema took two beakers and put a metal X in one beaker and metal Y in another beaker. She added acid A in beaker containing X she observed the reaction is vigorous but when she added acid B in second beaker the reaction was not as vigorous as in case of beaker containing X. When they placed metal Y in the salt solution of metal X. The colour of solution changes from green to colourless.

Which of the following statements is correct description of A, B and X, Y.
(a) Acid A is a strong acid. (b) Acid B is strong acid.
(c) Metal X is more reactive than Y. (d) Metal Y is less reactive than X.

## 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**

Two metals X and Y form the salt $XSO_4$ and $Y_2SO_4$ respectively. The solution of salt $XSO_4$ is blue in colour whereas that of $Y_2SO_4$ is colourless. When barium chloride solution is added to $XSO_4$ solution, then a white precipitate Z is formed alongwith a salt which turns the solution green. And when barium chloride solution is added to $Y_2SO_4$ solution, then the same white precipitate Z is formed alongwith colourless common salt solution.

**49.** The formula of salt $XSO_4$.
(a) $CaSO_4$ (b) $BaSO_4$ (c) $CuSO_4$ (d) $MgSO_4$

**50.** What could be the formula of white precipitate Z
(a) $CuSO_4$ (b) $CaSO_4$ (c) $BaSO_4$ (d) None of these

**51.** What is the formula of the salt which turns the soluton green in the first case.
(a) $CaCl_2$ (b) $CuCl_2$ (c) $MgCl_2$ (d) $BaCl_2$

**52.** The type of reaction occuring here
(a) Displacement (b) Double displacement (c) Neutralization (d) Combination

**Case -II**

A student performed an experiment to study the activity of salivary amylase. He took 1 ml starch solution in two test tubes (A) and (B). He left the both test tubes undisturbed for 15 – 20 minutes. Then he added few drops of iodine solution to both the test tube. Test tube B gives blue - black colour while test tube A does not.

**53.** Which of the following is correct about amylase?
(a) It helps buildup large molecules. (b) It is the another term for starch
(c) It is a monomer (d) It digests carbohydrates

**54.** Which of the following digestive enzyme is found in saliva?
(a) mucin (b) secretin (c) salivary amylase (d) pepsin

**55.** The experiment set up to study the effect of temperature on the activity of salivary amylase on starch is carried out at 10 °C. The solution mixture that contains amylase and starch keeps on giving blue colour for iodine test about half an hour. What is the reason for this?
(a) The temperature at which the enzyme deactivated.
(b) The temperature at which the enzyme denaturated.
(c) The temperature at which the enzyme shows the maximum activity.
(d) The temperature at which the enzyme shows the minimum activity.

**56.** Addition of Iodine solution to the above experiment gives bluis-black colour.This indicates that
(a) starch is broken down into sugars by salivary amylase in saliva.
(b) carbohydrate is broken down into sugars by pepsin.
(c) Starch is not broken down in the saliva.
(d) Amylase is absent in saliva.

**Case -III**

A lens is a piece of transparent material with two refracting surfaces such that at least one is curved and refractive index of used material is different from that of the surroundings. If an object is placed at a distance u from the optical centre O of a lens and its images is formed at a distance v (from the optical centre) and focal length of this lens is f, then $\frac{1}{f}=\frac{1}{v}-\frac{1}{u}$

**57.** An object is situated at a distance of $f/2$ from a convex lens of focal length $f$. Find the distance of image is
(a) 2f (b) f (c) –f (d) 3f

**58.** A convex lens throws on a screen 12 m from the lens a magnified image of the object. If the magnification is 15, find the focal length of the lens.
(a) 0.50m (b) 0.75 (c) 1m (d) 2m

**59.** An object is placed at a distance of 50 cm from a concave lens of focal length 20 cm. Which of the following statements is/are correct?
(I) The distance of image is –14.3 from the lens (II) The image is real (III) The image is virtual
(a) only (I) is correct (b) only (II) is correct (c) only (I) and (II) is correct (d) only (II) and (III) is correct

**60.** A convex lens forms a real and inverted image of a needle at a distance of 25 cm from the lens. If the image of the same size as that of the needle, then where should the needle be placed in front of the lens.
(a) –25 cm (b) –50 cm (c) +25 (d) +50 cm