AKASH MODEL SR. SEC. SCHOOL

STUDY MATERIAL

Term - I

Class - X

Subject - Science

SAMPLE QUESTION PAPER-1 (TERM 1) 2021-22

SUBJECT : SCIENCE

CLASS : X

Time : 90 minutes **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 composition of aqua- regia is:

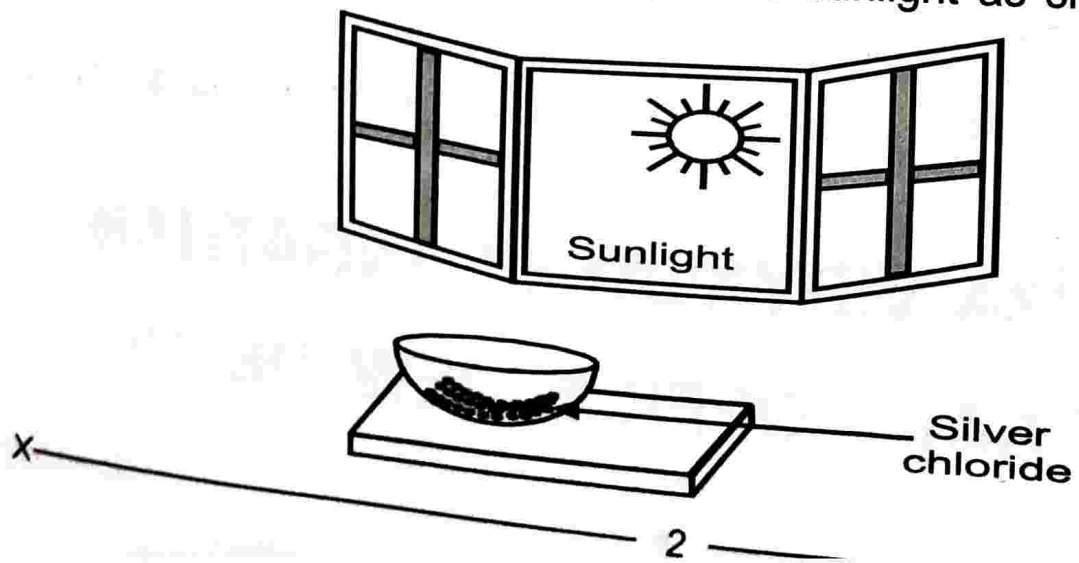
(a) Dil. HCl (3) : Conc.HNO_3 (1)

(b) Conc. HCl (3) : Dil .HNO_3 (1)

(c) Conc. HCl (3) : Conc. HNO_3 (1)

(d) Dil. HCl (3) : Dil .HNO_3 (1)

2. The silver chloride placed under the sunlight as shown in the figure:



The colour of silver chloride after some time is:

(a) Black (b) Green

(c) Grey (d) Yellow

3. A substance "X" is used in white-washing and is obtained by heating limestone in the absence of air. Identify "X" .

(a) $CaOCl_2$

(b) $Ca(OH)_2$

(c) CaO

(d) $CaCO_3$

4. Which one of the given is true, if a substance has a pH value of 4?

(a) The substance is a base

(b) The substance is an acid

(c) The substance is a neutral substance

(d) Either (a) or (b)

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

(a) $HCl + Ba(OH)_2 \rightarrow BaCl_2 + 2H_2O$

(b) $2HCl + Ba(OH)_2 \rightarrow BaCl_2 + 2H_2O$

(c) $2HCl + Ba(OH)_2 \rightarrow BaH_2 + 2HCl + O_2$

(d) $HCl + 2Ba(OH)_2 \rightarrow 2BaCl_2 + 2H_2O + O_2$

6. Sodium carbonate is a basic compound because it is a salt of a_____?

(a) Strong acid and strong base

(b) Strong base and weak acid

(c) Strong acid and weak base

(d) weak acid and strong base

7. Generally metals react with acids to give salt and hydrogen gas. Which of the following acids does not give hydrogen gas on reacting with metals (except Mn and Mg)?

a) H_2SO_4

b) HCl

c) HNO_3

d) All of these

8. During the preparation of HCl gas on a humid day, the gas is usually passed through the guard tube containing $CaCl_2$. The purpose of using $CaCl_2$ is:

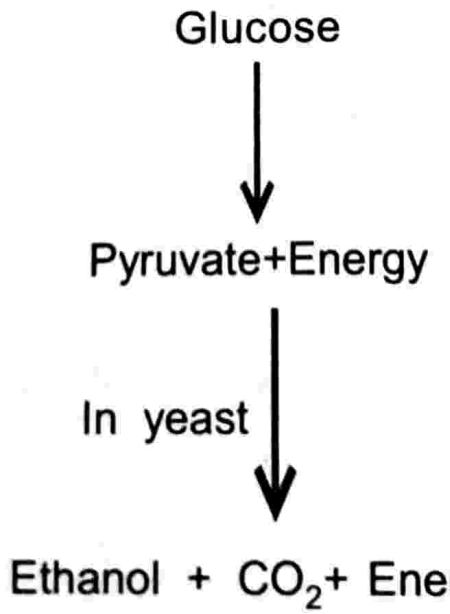
(a) To add moisture to the gas (HCl)

(b) To absorb HCl gas

(c) To absorb moisture from HCl gas

(d) To Use it as a catalyst

9. The image shows the flow diagram for the breakdown of glucose in yeast.



Under which condition these types of products are obtained?

(a) in the presence of oxygen

(b) in the absence of oxygen

(c) in the presence of carbon dioxide

(d) in the absence of carbon dioxide

10. How water is taken up from soil to the xylem tissue of the plant roots?

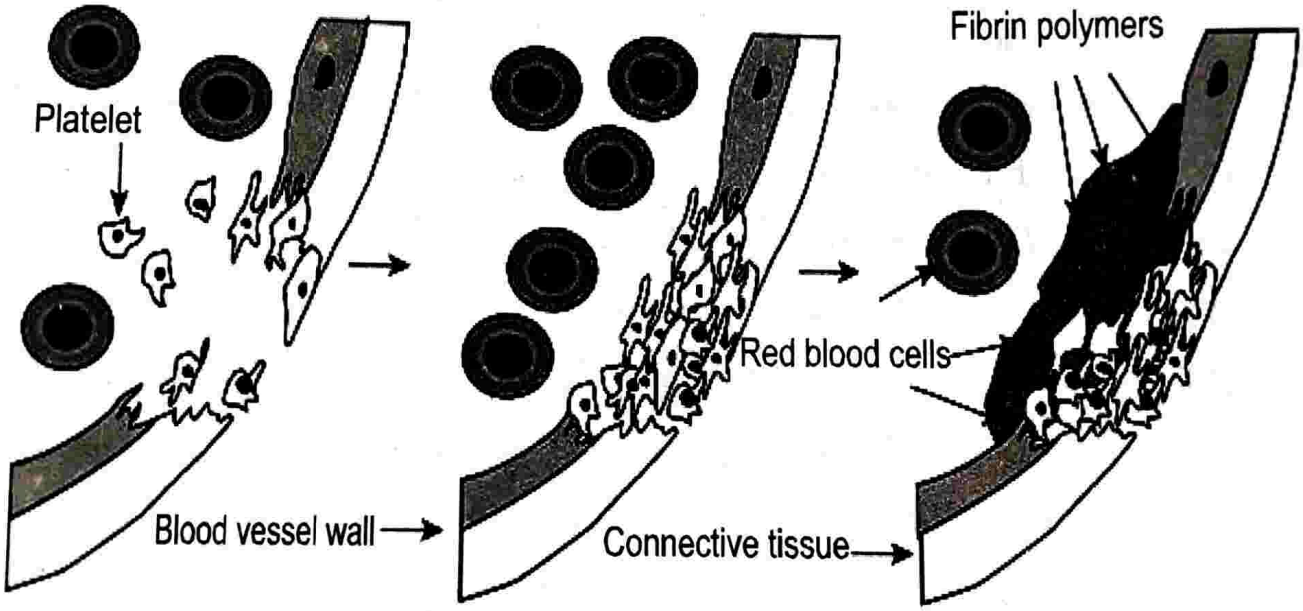
(a) xylem attracts water molecules

(b) roots act as a suction pump for taking water

(c) soil expels the water with pressure to the xylem

(d) difference in the ion concentration creates a gradient for water movement

11. The image shows the healing of a wound.



Based on the image, what explains the process?

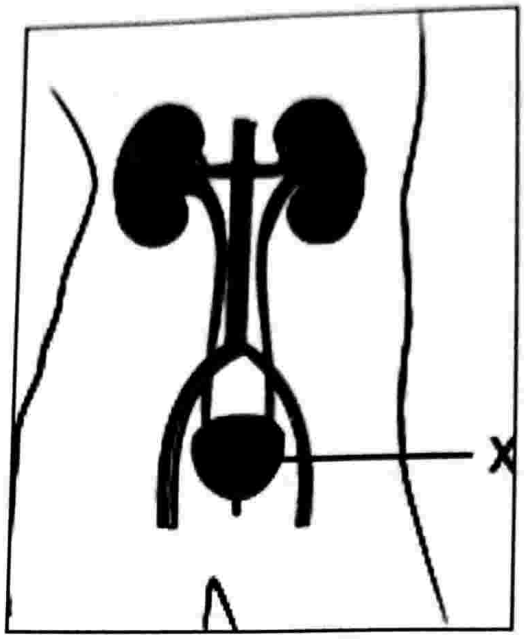
(a) platelets form clot by plugging the site of injury

(b) platelets uses component of broken vessel to form clot

(c) red blood cells divide and replace the broken vessel at the site of injury

(d) red blood cells and platelets migrate to site of injury and secrete substance that forms new vessel

12. The image shows the excretory system in humans.



What is the importance of the labelled part in excretory system?

(a) It produces urine.

(b) It filters waste from the blood.

(c) It stores the urine till urination.

(d) It carries urine from kidney to outside.

13. Which of the equation show correct conversion of CO_2 and H_2O into carbohydrates in plants?

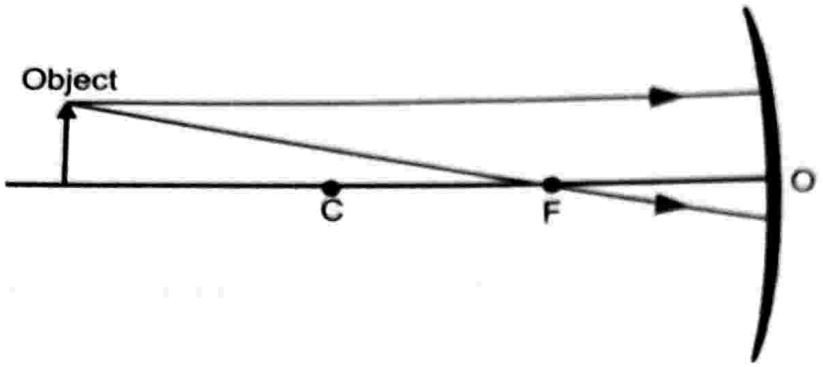
(a) $6CO_2 + 6H_2O \xrightarrow[\text{Heat energy}]{\text{Chlorophyll}} \underset{(Glucose)}{C_6H_{12}O_6} + 6O_2 + 12H_2O$

(b) $6CO_2 + 6H_2O \xrightarrow[\text{Sunlight}]{\text{Chlorophyll}} \underset{(Glucose)}{C_6H_{12}O_6} + 6O_2 + 12H_2O$

(c) $6CO_2 + 12H_2O \xrightarrow[\text{Sunlight}]{\text{Chlorophyll}} \underset{(Glucose)}{C_6H_{12}O_6} + 6O_2 + 6H_2O$

(d) $6CO_2 + 12H_2O \xrightarrow[\text{Heat energy}]{\text{Chlorophyll}} \underset{(Glucose)}{C_6H_{12}} + 6O_2 + 6H_2O$

14. The image shows the path of incident rays to a concave mirror.



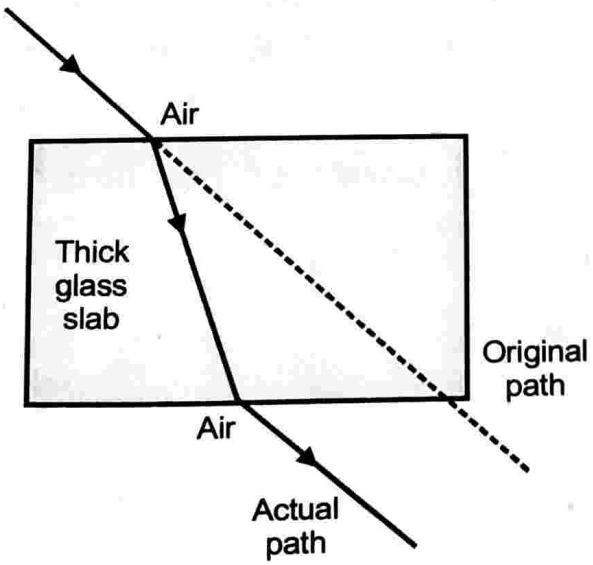
Where would the reflected rays meet for the image formation to take place?

(a) behind the mirror
(b) between F and O
(c) between C and F
(d) beyond C

15. Rekha placed a juice bottle at a distance of 20 cm in front of a convex mirror which has a focal length of 20 cm. Where is the image likely to form?

(a) at focus behind the mirror
(b) at focus in front of the mirror
(c) at a distance of 10 cm behind the mirror
(d) at a distance of 10 cm in front of the mirror

16. The image shows the path of light travelling through a glass slab.



What causes the ray of light to deviate from its original path?

(a) change in the amount of light

(b) change in the direction of wind flow

(c) change in the temperature of the air

(d) change in the density of the medium

17. Which option justifies that the Sun appears red at sunrise and sunset?

(a) red scatters highest by the atmosphere

(b) the distance between the sun and earth reduces

(c) red has high wavelength, so it travels longer distance

(d) the white light disperses into seven colours, only red enters the atmosphere

18. Using a convex lens an image of an object produced on a screen is about 36 cm in size. The image produced is about 3 times the size of the object. What is the size of the object?

(a) 12 cm

(b) 33 cm

(c) 39 cm

(d) 108 cm

19. A student conducts an experiment using a convex lens. He places the object at a distance of 60 cm in front of the lens and observed that the image is formed at a distance of 30 cm behind the lens. What is the power of the lens?

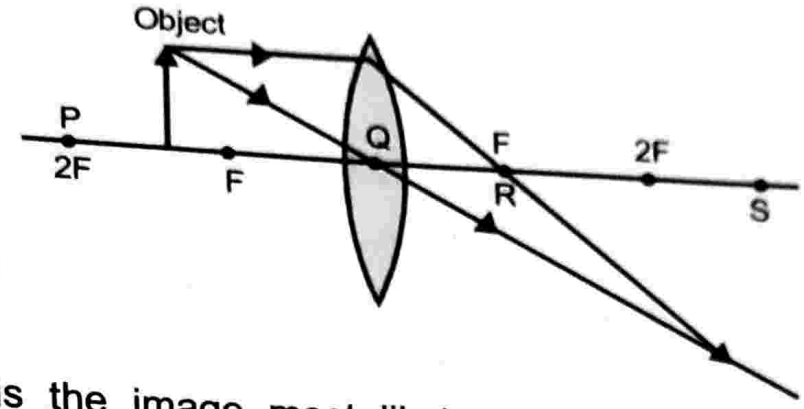
(a) 0.005 dioptre

(b) 0.05 dioptre

(c) 5 dioptre

(d) 50 diptre

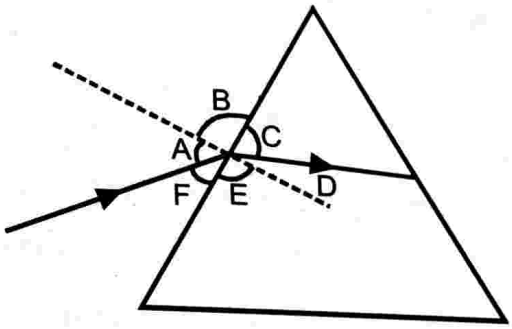
20. The image represents the rays of light travelling through a convex lens.



Where is the image most likely to form?

(a) position P
(b) position Q
(c) position R
(d) position S

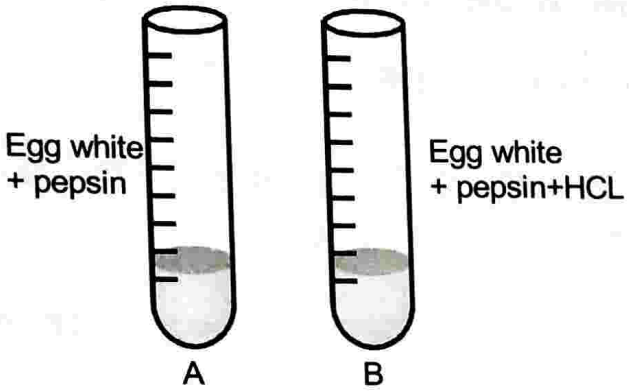
21. The image shows a light ray incident on a glass prism.



The various angles are labeled in the image. Which angle shows the angle of incidence and angle of refraction, respectively?

(a) A and D
(b) B and E
(c) C and F
(d) D and F

22. A student sets up an experiment to study the role of enzymes in digestion of food.



In which test tube, the digestion of protein will occur?

(a) Test tube A as pepsin will breakdown into simple molecules.

(b) Test tube B as HCl will breakdown protein into simple molecules.

(c) Test tubes A as pepsin will breakdown protein into simple molecules.

(d) Test tube B as HCl will activate pepsin for breakdown of protein into simple molecules.

23. A student writes the chemical equation of the reaction between lead and copper chloride.

$$Pb(s)+CuCl_2(aq)->PbCl_2(aq)+Cu(s)$$

Which option explains the reason for the formation of lead chloride?

(a) copper is more reactive than lead

(b) lead is less reactive than copper

(c) lead and copper are equally reactive

(d) lead is more reactive than copper

24. When water of crystallization is removed from copper sulphate solution, how does the colour of the salt change?

(a) from blue to red

(b) from white to red

(c) from white to blue

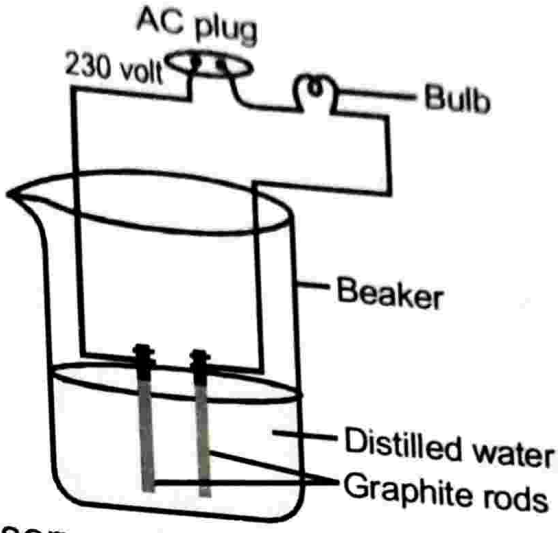
(d) from blue to white

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. A student makes an arrangement to test the electrical conductivity of distilled water as shown.



The student observes that the bulb does not glow. What could be the reason the bulb does not glow?

a) the bulb needs DC source to glow

b) the water never conducts electricity

c) the graphite is bad conductor of electricity

d) the distilled water does not have ions present in it

26. An oxide of element P is added to an acid where it forms salt and water. The table shows the possible value of pH and the type of element before the reaction.

	pH	Type of Element
A	Less than 7	Metal
B	Less than 7	Non-metal
C	Greater than 7	Metal
D	Greater than 7	Non-metal

Which option is correct?

(a) A (b) B

(c) C (d) D

35. What happens when a pellet of sodium is dropped in water?

(a) It catches fire and forms oxide.

(b) It absorbs heat and forms oxide.

(c) It catches fire and forms hydroxide.

(d) It absorbs heat and forms hydroxide.

36. A student adds an equal amount of copper sulphate solution in two beakers. He adds zinc in beaker P and silver in beaker Q. The student observes that the color of the solution in beaker P changes while no change is observed in beaker Q. Which option arranges the metals in increasing order of reactivity?

a) silver-zinc-copper

b) zinc-copper- silver

c) silver-copper-zinc

d) copper-silver-zinc

37. A student performs some activities on two substances and records the observations in a table

Activity	Substance M	Substance N
Electrical conductivity	Good conductor	Poor Conductor
Beaten with hammer	Shape changes	Changes in powder
Stricken with a metal rod	Makes sonorous sonorous	Does not make sound

Which option classifies the substances into metals and non-metals?

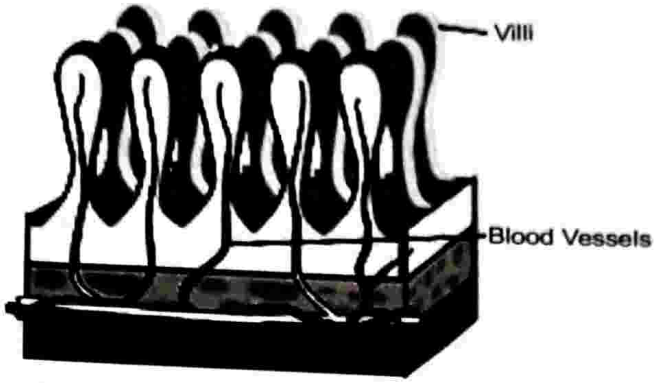
(a) both the substances are metals

(b) both the substances are non-metals

(c) substance M is metal while substance N is non-metal

(d) substance M is non-metal while substance N is metal

38. The image shows a cross section of small intestine.



What will be the likely happen if the number of villi increases in the intestine?

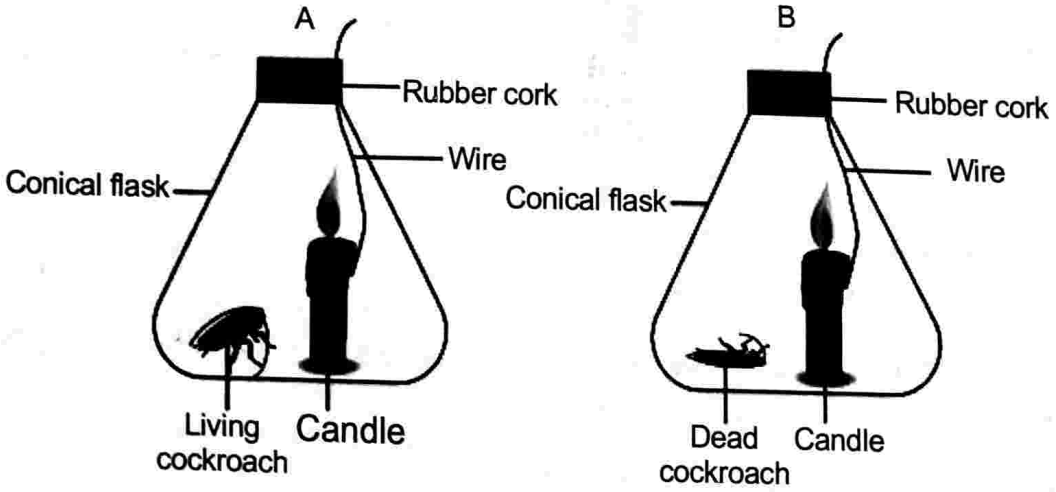
(a) increase in the absorption of food

(b) fast elimination of waste from the body

(c) increase in flow of blood in the small intestine

(d) fast breakdown of larger food particles into smaller ones

39. A student setup an experiment to study the human respiratory system. In the experiment, the student places candle and a living cockroach in the flask A, while a candle and a dead cockroach in flask B. The burning of candle needs oxygen.



After 10 minutes, the student observes that the candle in flask A extinguish faster while candle in flask B keeps burning for a longer time. What can be evaluated from this experiment?

(a) candle produces high amount of carbon dioxide

(b) living beings consumes oxygen during respiration

(c) burning of candle decreases the life span of cockroach

(d) water vapours produced by living beings prevents burning of candle

40. The loss of water from the leaves of the plant is transpiration. How this process is advantageous for the plant?

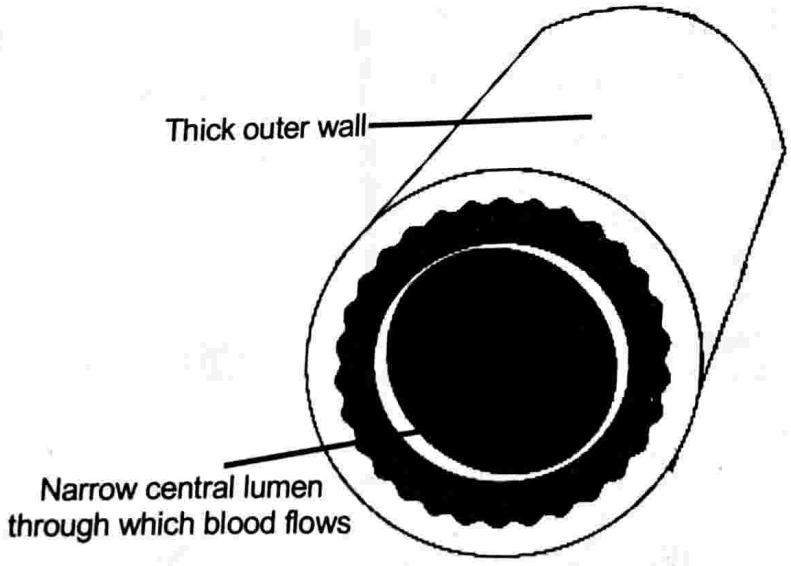
(a) It helps in the downward movement of the water.

(b) It helps the plant to maintain temperature in hot sunny days.

(c) It acts as a driving force for distribution of food in plant's body.

(d) helps maintain a constant level of water in the soil around the plant.

41. The image shows the structure of an artery.



Which statement supports the likely reason for thick walls in arteries?

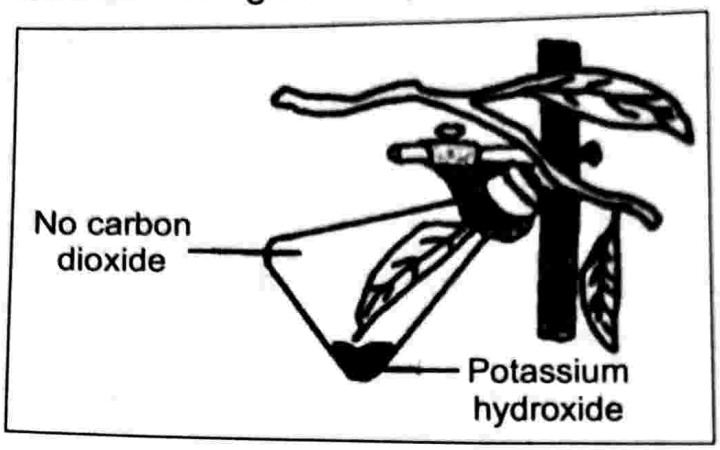
(a) to carry large amount of blood

(b) to allow easy exchange of gases with cells

(c) to ensure blood flows in only one direction

(d) to sustain the high-pressure blood from the heart

42. What is the aim of the given experiment?



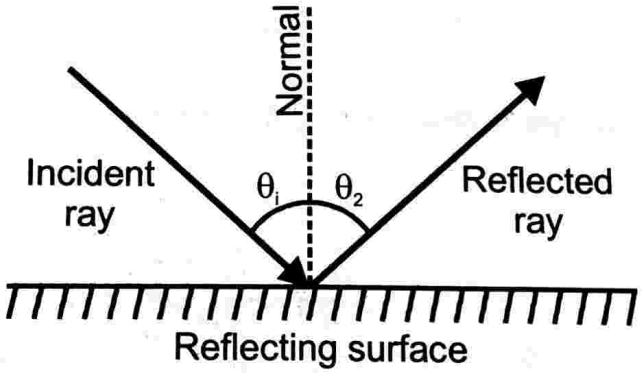
(a) To prove that sunlight is essential for photosynthesis.

(b) To prove that carbon dioxide is essential for photosynthesis.

(c) To prove that water is essential for photosynthesis.

(d) To prove that chlorophyll is essential for photosynthesis.

43. The image shows reflection of light on a mirror.



Based on the image, what can be inferred?

(a) The incident ray, reflected ray, and normal at the point of incidence lie on a common plane.

(b) The angle of incidence, angle of reflection, and normal at the point of incidence lie on a common plane.

(c) The angle between incident ray and normal is greater than the angle between normal and the reflected ray.

(d) The angle between incident ray and normal is smaller than the angle between normal and the reflected ray.

44. A student studies that convex mirror always forms virtual image irrespective of its position. What causes the convex mirror to always form a virtual image?

(a) because the reflected ray never intersects

(b) because the reflected ray converges at a single point

(c) because the incident ray traces its path back along the principal axis

(d) because the incident ray of a convex mirror gets absorbed in the mirror

45. The speed of light in air is 3×10^8m s^{-1}, whereas that of the speed of light in water is 2.26×10^8m s^{-1}. What is the refractive index of water with respect to air?

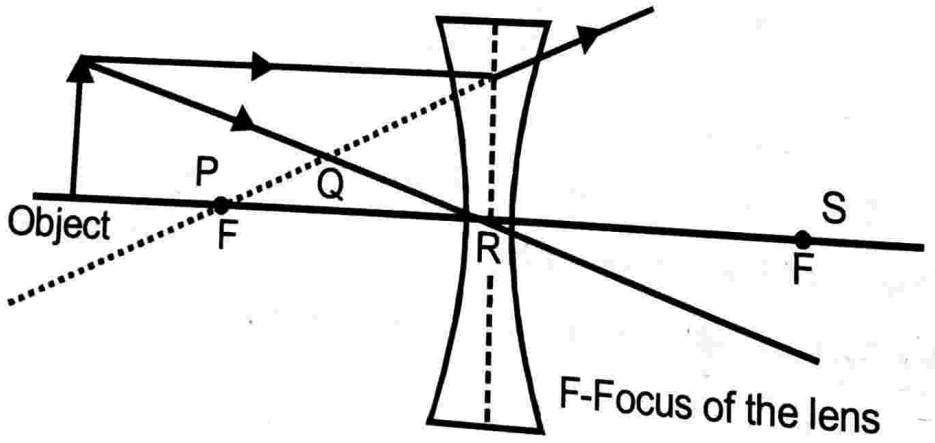
(a) 1

(b) 0.75

(c) 1.32

(d) 2.75

46. The image represents the rays of light travelling through a concave lens.



Where is the image most likely to form?

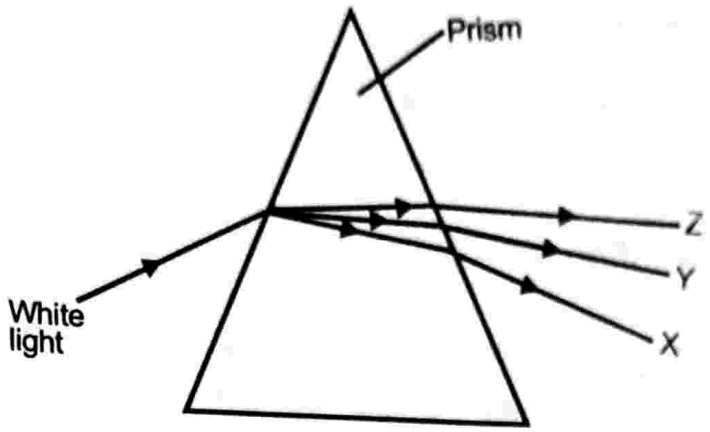
(a) P

(b) Q

(c) R

(d) S

47. The image shows the dispersion of the white light in the prism.



What will be the colours of the X, Y and Z?

(a) X: red; Y: green; Z: violet

(b) X: violet; Y: green; Z: red

(c) X: green; Y: violet; Z: red

(d) X: red; Y: violet; Z: green

48. Why stars appear to twinkle at night?

(a) because the light of stars travels in different medium

(b) because the distance of star varies when earth rotates

(c) because the star changes its position relative to earth

(d) because the atmosphere reflects the light at different angles

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 1- Bleaching powder is a pale yellowish powder. It is soluble in water but due to the presence of impurities, we never observe a clear solution. Its chemical formula is CaOCl2 with its chemical name as Calcium hypochlorite. Bleaching powder is also called calcium chlorohypochlorite because it is considered as a mixed salt of hydrochloric acid and hypochlorous acid.

49. The compound that is used in the manufacture of bleaching powder is

A. Dry $Ca(OH)_2$.

B. Milky Suspension of $Ca(OH)_2$.

C. Clear solution of $CaCl_2$.

D. Clear solution of $CaCO_3$.

50. One of the products obtained during the electrolysis of aqueous Sodium Chloride(brine) used in the preparation of Bleaching powder is.

A. Sodium metal at cathode

B. Hydrogen gas

C. Chlorine gas

D. Slaked lime.

51. One of the following cannot be considered as the use of bleaching powder.

A. It is an oxidising agent.

B. it is used for disinfecting water.

C. it bleaches cotton and linen in the textile industry.

D.. it releases Oxygen gas on heating which can be used for aeration of water bodies.

52.. Chemical Formula of bleaching powder is

A. Caocl

B. $CaOCl_2$

C. CaCl

D. $CaCl_2$

CASE 2-An image formed in a convex mirror is always virtual,erect and smaller in size whatever be the position of the object. However in a concave mirror the image may be real or virtual: erect or inverted :smaller or bigger in size than the object. This would depend upon the distance of the object from the mirror.

53. A Concave mirror is used as reflector in

A. Torches

B. Search lights

C. Head lights of motor vehicles

D. All the above

54. In street lamps,the reflector used is a

A. Convex mirror

B. Concave mirror

C. Plane mirror

D. None of these

55. Which of the mirrors has larger field of view ?

A. Convex

B. Concave

C. plane

D. all have same field of view

56. Real or virtual image of an object formed by a concave mirror depends on

A. Size of mirror

B. Polish of mirror

C. Distance of object from the mirror

D. All of these

CASE-3

The force exerted by the blood against the wall of a vessel is called blood pressure. This pressure is much greater in arteries than in veins. The pressure of blood inside the artery during ventricular systole (contraction) is called systolic pressure and pressure in the artery during ventricular diastole (relaxation) is called diastolic pressure.

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CASE-3

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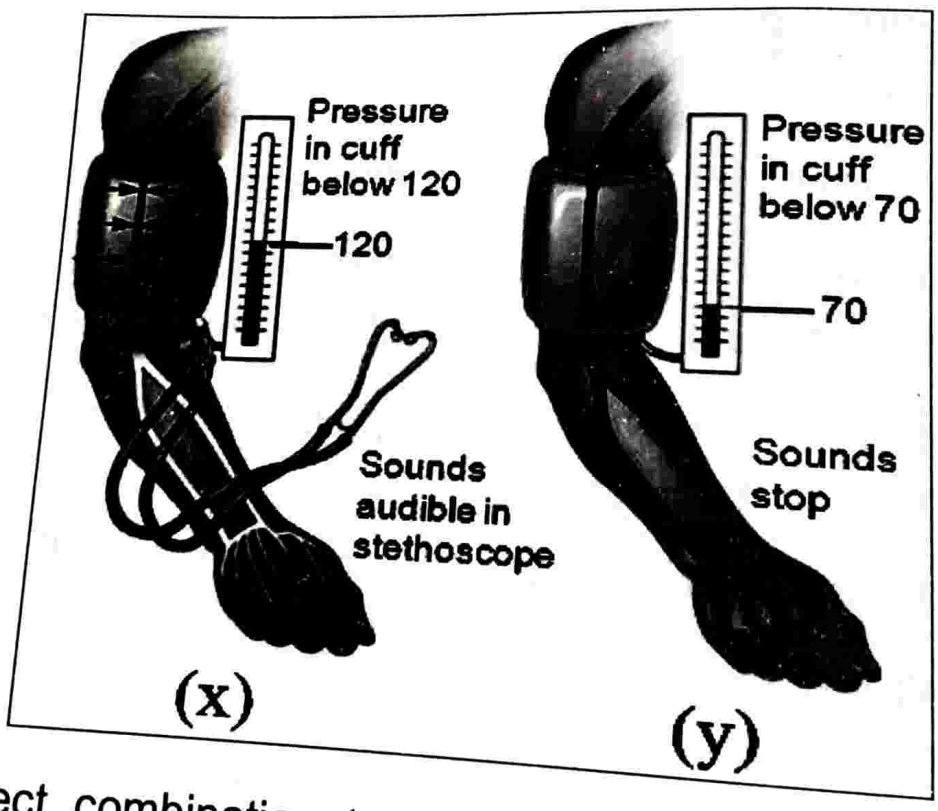
57. Study the table given below and select the row that has incorrect information.

	SYSTOLIC BLOOD PRESSURE	DIASTOLIC BLOOD PRESSURE
(A) AVERAGE RANGE	90-120mm of Hg	60-80mmof Hg
(B) READING OF BLOOD PRESSURE	HIGH	LOW
(C) VENTRICLES OF HEART	CONTRACT	RELAXED
(D) BLOOD PRESSURE IN ARTERIES	MINIMUM	MAXIMUM

58.



Choose the correct combination to depict the figure given above :

a) x. Systolic pressure, y. Systolic pressure

b) x. Systolic pressure, y. Diastolic pressure

c) x. Diastolic pressure, y. Systolic pressure

d) x. Diastolic pressure, y. Diastolic pressure

59.. The characteristics observed in hypertension are:

a) Constriction of arterioles

b) Results in rupture of an artery

c) Causes internal bleeding

d) Increased blood flow

Choose the correct option based on the statements.

(a) 1 and 2

(b) 1, 2 and 3

(c) Only 4

(d) 2, 3 and 4

60 A person travelling through a public transport suddenly fainted. Upon check-up by a health care provider, it was found that his blood pressure was 152-95. Name the medical condition that the person is going through.

(a) Low blood pressure

(b) High blood pressure

(c) Low sugar level

(d) High sugar level

Questions in lieu of diagram based questions for VI candidates

SECTION A

2 When silver chloride is placed under the sunlight after some time the colour of silver chloride turns.

(a) black

(b) green

(c) grey

(d) yellow

11 Which of the following blood cells plays an important role in blood clotting

(a) platelets

(b) RBC

(c) WBC

(d) none of these

12 What is the importance of Urinary bladder in excretory system

(a) it produces urine

(b) it filters waste from the blood

(c) it stores the urine till urination

(d) it carries urine from kidney to outside

14 When an object is placed beyond C light rays fall on concave mirror. Where would the reflected rays meet for the image formation

(a) behind the mirror

(b) between F and O

(c) between C and F

(d) beyond C

16 When a light ray pass through glass slab it deviates from its original path. What causes the ray of light to deviate from its original path

(a) change in the amount of light

(b) change in the direction of the wind flow

(c) change in the temperature of the air

(d) change in the density of the medium

20 A student obtains a blurred image of a distant object on a screen using a convex lens. To obtain a distinct image on the screen he should move the lens

(a) away from the screen

(b) towards the screen

(c) to a position very far away from the screen

(d) either towards or away from the screen depending upon the position of the object

21 Which colour is least deviated by a prism?

(a) Red light

(b) Green light

(c) violet light

(d) yellow light

22 The inner lining of stomach is protected by one of the following from hydrochloric acid. Choose the correct one

(a) pepsin
(b) bile
(c) salivary amylase
(d) mucous

SECTION B

25 What is the ratio by mass in which hydrogen and oxygen are collected in the test tube during electrolysis of water

(a) 1:2
(b) 1:1
(c) 2:3
(d) 1:8

38 What will happen if the number of Villi increases in the intestine

(a) increase in the absorption of food
(b) fast elimination of waste from the body
(c) increase in flow of blood in the small intestine
(d) fast break down of larger food particles into smaller ones.

39 Which of the following gas is released during the process of respiration

(a) Oxygen
(b) carbon dioxide
(c) hydrogen
(d) nitrogen

41 What is the reason for thick walls in arteries

(a) to carry large amount of blood
(b) to allow easy exchange of gases with cells
(c) to ensure blood flows in only one direction
(d) to sustain the high pressure blood from the heart

42 The function of KOH is to absorb

(a) oxygen
(b) carbon dioxide
(c) nitrogen
(d) argon

43 According to laws of reflection of light, choose the correct statement

a) The incident ray, reflected ray, and normal at the point of incidence lie on a common plane.

b) The angle of incidence, angle of reflection, and normal at the point of reflection lie on a common plane.

c) The angle between incident ray and normal is greater than the angle between normal and the reflected ray.

d) The angle between incident ray and normal is smaller than the angle between normal and the reflected ray.

46 Which of the following mirror is used by a dentist to examine a small cavity

(a) convex mirror

(b) concave mirror

(c) plane mirror

(d) combination of concave and convex mirror

47 When a white light is passes through a hollow prism then there is

(a) dispersion but no deviation

(b) no dispersion and no deviation

(c) deviation but no dispersion

(d) dispersion and deviation both

SECTION C

Case III

58 What is the normal blood pressure of human

(a) 128/80 mm of Hg

(b) 120/80 mm of Hg

(c) 80/120 mm of Hg

(d) 130/80 mm of Hg

SAMPLE QUESTION PAPER-2 (TERM 1) 2021-22

SUBJECT : SCIENCE

CLASS : X

Time : 90 minutes **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. 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?

$$3Fe(s)+4H_2O(g)\rightarrow Fe_3O_4(s)+4H_2(g)$$

(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. Medicine used for treatment of indigestion

a) Analgesic b) antacid

c) antiseptic d) antipyretic

4. The common name for Calcium sulphate hemihydrate

a) Caustic soda b) gypsum

c) plaster of paris d) washing soda

5. The substance that will be flattened on beating with a hammer is

(a) crystal of iodine (b) lump of sulphur

(c) piece of coal (d) zinc granule

6. Generally metallic oxides are basic and non-metallic oxides are acidic in nature. Solution of which of the following oxides in water will change the colour of blue litmus to red?

(a) sulphur dioxide (b) magnesium oxide

(c) iron oxide (d) copper oxide

7. Which gas is evolved when zinc granule reacts with dilute H_2SO_4

A. Nitrogen B. Hydrogen

C. Oxygen D. Carbon dioxide

8. 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)

9. Which of the following are not ionic compounds?

(i) KCl
(ii) Cl_2
(iii) CCl_4
(iv) NaCl

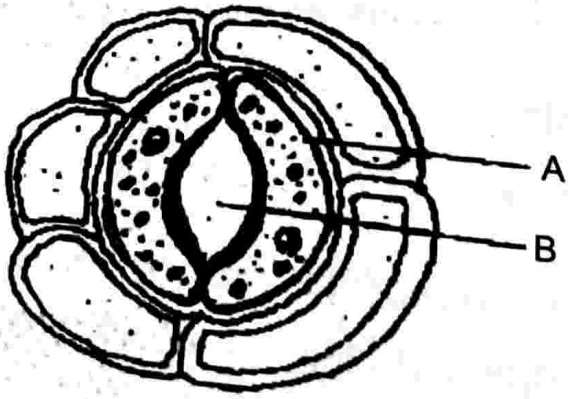
(A) (i) and (ii)
(B) (ii) and (iii)
(C) (iii) and (iv)
(D) (i) and (iii)

10. In the double displacement reaction between aqueous potassium iodide and aqueous lead nitrate, a yellow precipitate of lead iodide is formed. While performing the activity if lead nitrate is not available, which of the following can be used in place of lead nitrate?

(a) Lead sulphate (insoluble)
(b) Lead acetate
(c) Ammonium nitrate
(d) Potassium sulphate

11. The parts shown as A and B in the given diagram are

a) A is epidermal cell, B is stomata pore
b) A is guard cell, B is stomatal pore
c) A is epidermal cell, B is guard cell
d) A is guard cells, B is epidermal cell



12. The correct pathway of blood in circulatory system is

(a) Atria → ventricles → arteries → veins
(b) Ventricles → atria → veins → arteries
(c) Ventricles → veins → arteries → atria
(d) Veins → ventricles → atria → arteries

13. Which of the following statement(s) is (are) true about respiration?

(i) During inhalaton, ribs move inward and diaphragm is raised

(ii) In the alveoli, exchange of gases takes place i.e., oxygen from alveolar air difuses into blood and carbon dioxide from blood into alveolar air

(iii) Hemoglobin has greater affinity for carbon dioxide than oxygen

(iv) Alveoli increase surface area for exchange of gases

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

14. Identify the phase of circulation which is represented in the diagram of heart given below

A. Blood transferred to the right ventricle and left ventricle simultaneously.

B. Blood is transferred to lungs for oxygenation and is pumped into various organs simultaneously.

C. Blood transferred to the right auricle and left auricle simultaneously.

D. Blood is received from lungs after oxygenation and is received from various organs of the body.

15. Choose the forms in which most plants absorb nitrogen

(i) Proteins
(ii) Nitrates and Nitrites
(iii) Urea
(iv) Atmospheric nitrogen

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

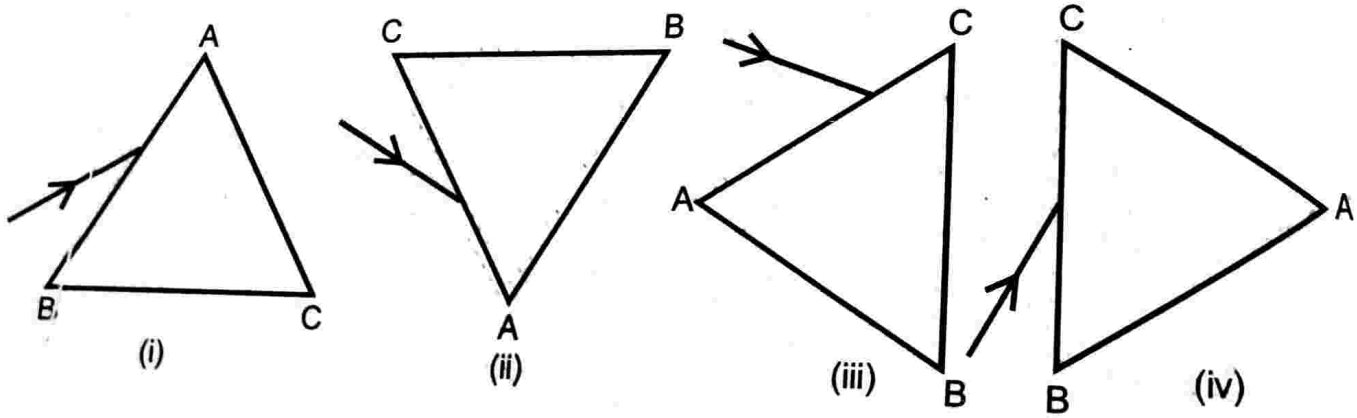
16. Choose the event that does not occur in photosynthesis

(a) Absorption of light energy by chlorophyll
(b) Reduction of carbon dioxide to carbohydrates
(c) Oxidation of carbon to carbon dioxide
(d) Conversion of light energy to chemical energy

17. Refractive index of glass with respect to air is 3/2. What is the refractive index of air w.r.t glass?

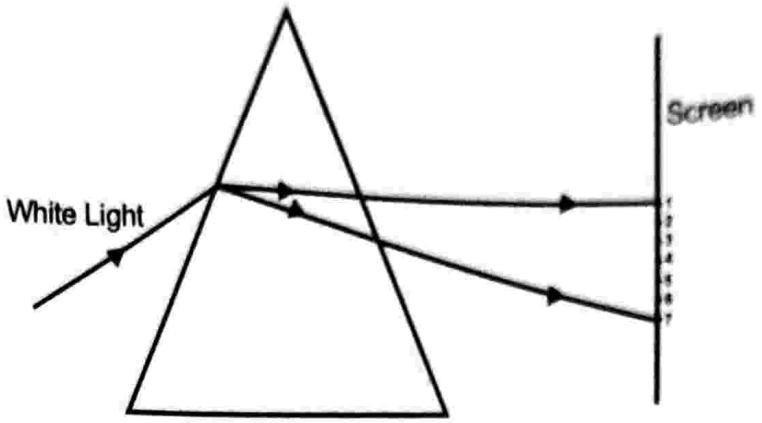
a) 2/3
b) 1
c) 0
d) 3/2

18. A prism ABC (with BC as base) is placed in different orientations. A narrow beam of white light is incident on the prism as shown in below Figure. In which of the following diagrams, after dispersion, the third colour from the top of the spectrum corresponds to the colour of the sky?



A. (i)
B. (ii)
C. (iii)
D. (iv)

19. Identify the colours as per the order : 1,3,5,7 given in the picture below



a) red,yellow, blue,violet
b) yellow , indigo, blue , red
c) violet, blue, yellow, red
d) Orange, green, red, blue

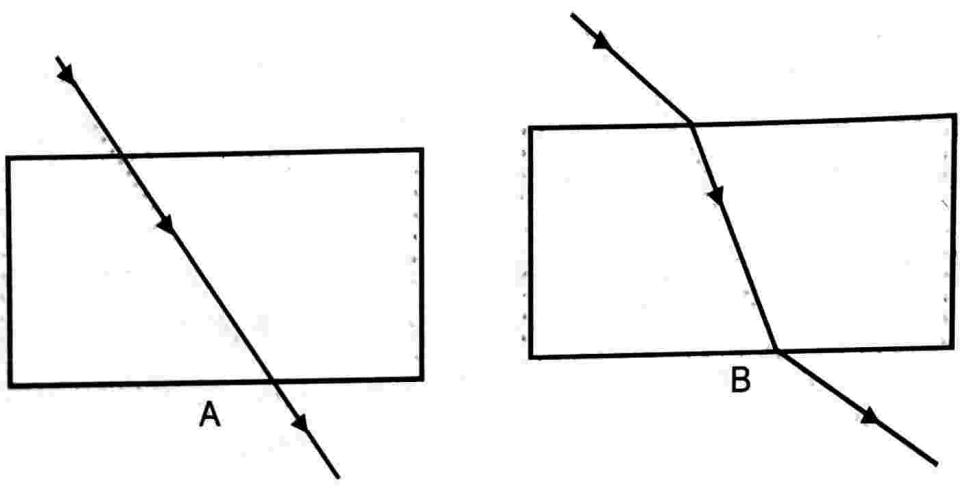
20) The power of a convex lens of focal length 50 cm is

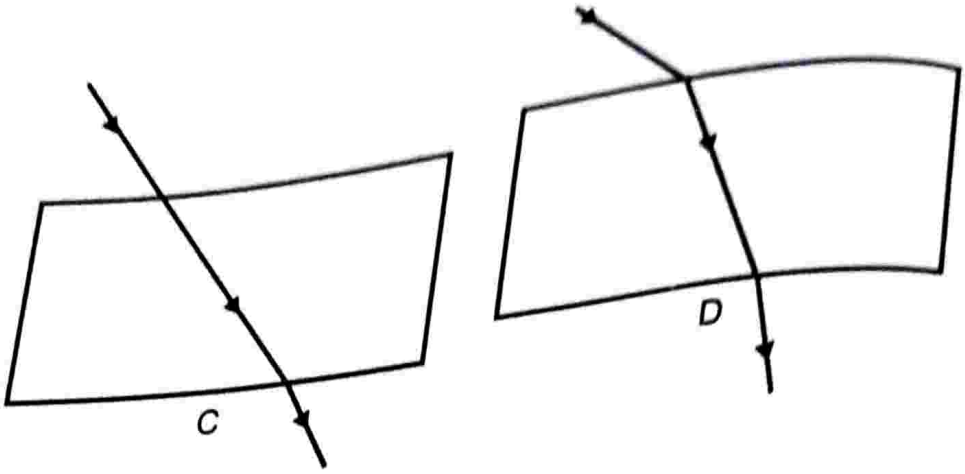
a) +2D
b) -2D
c) 50D
d) -5D

21) The image formed by a concave mirror is real, inverted and of same size as that of the object. The position of the object is

a) At C
b) At F
c) Between C and F
d) Beyond C

22) Identify the correct image





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

23) Magnification produced by a rear-view mirror fitted in vehicles

a) Is less than one
b) Is more than one
c) Is equal to one
d) Can be more than or less than one depending upon the position of the object in front of it.

24) An object is placed 25 cm from a convex lens whose focal length is 10 cm. The image distance is _____ cm.

a) 50 cm
b) -7.14 cm
c) 16.66 cm
d) -10 cm

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. Three beakers labelled as A, B and C each containing 25 ml of water were taken. A small amount of NaOH, anhydrous $CuSO_4$ and NaCl were added to the beakers A, B and C respectively. It was observed that there was an increase in the temperature of the solution contained in beakers A and B, whereas in case of

beaker C, the temperature Of the solution falls. Which one of the following statement(s) is (are) correct?

i) In beakers A and B, exothermic process has occurred.

(ii) In beakers A and B, endothermic process has occurred.

(iii) In beaker C exothermic process has occurred.

(iv) In beaker C endothermic process has occurred.

(a) (i) only

(b) (ii) only

(c) (i) and (iv)

d) (iv), (ii) and (iii)

26. Which among the following statement(s) is (are) true?

(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)

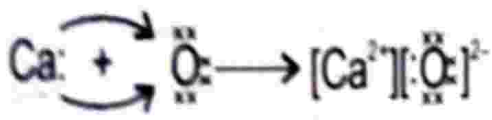
(c) (ii) and (iii) (d) (iv) only

27. A substance 'X' is used in white-washing and is obtained by heating limestone in the absence of air. Identify 'X'.

(a) $CaOCl_2$ (b) $Ca(OH)_2$

(c) CaO (d) $CaCO_3$

28. The formula of the compound whose formation is described in the picture below is:



a) CaO_2 b) Ca_2O

c) CaO d) CaO_4

29. Which of the following Gas can be used to store packaged oily food

a) CO_2 b) O_2

c) N_2O d) N_2

30 Food cans are coated with tin and not with zinc because

(A) zinc is costlier than tin

(B) zinc has a higher melting point than tin

(C) zinc is more reactive than tin

(D) zinc is less reactive than tin

Question No. 31 to 34 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 (A): Plaster of Paris is used by doctors for setting fractured bones.

Reason (R): When Plaster of Paris is mixed with water and applied around the fractured limbs, it sets into a hard mass.

32. Assertion (A): Zinc can easily displace copper on reacting with a solution of copper sulphate.

Reason (R) : Copper is more reactive metal as compared to Zinc

33. Assertion : Ventricles have thicker walls than auricles.

Reason: Ventricles have to pump blood into various organs with great pressure

34. Assertion (A): If the rays are diverging after emerging from a lens the lens must be concave.

Reason (R): The convex lens can give diverging rays.

35. Which one of the following metals does not react with cold as well as hot water?

(A) Na (B) Ca

(C) Mg (D) Fe

36. . Which of the following statement(s) is (are) true about heart?

(i) Left atrium receives oxygenated blood from different parts of body while right atrium receives deoxygenated blood from lungs.

(ii) Left ventricle pumps oxygenated blood to different body parts while right ventricle pumps deoxygenated blood to lungs.

(iii) Left atrium transfers oxygenated blood to right ventricle which sends it to different body parts.

(iv) Right atrium receives deoxygenated blood from different parts of the body while left ventricle pumps oxygenated blood to different parts of the body

(A) (i)

(B) (ii)

(C) (ii) and (iv)

(D) (i) and (iii)

37. Match the words of Column (A) with that of Column (B)

COLUMN 1	Column 2
A Phloem	i Excretion
B Nephron	ii Translocation of food
C Veins	iii Clotting of blood
D Platelets	iv Deoxygenated blood

(A) A - (ii), B - (i), C - (iv), D - (iii)
(B) A - (iii), B - (ii), C - (i), D - (iv)
(C) A - (iv), B - (iii), C - (ii), D - (i)
(D) A - (i), B - (iv), C - (iii), D - (iv)

42.

38. Each nephron has a cup shaped upper end called _____, which contains a _____.
(A) Bowman's capsule, Ampulla
(B) Capillaries, Bowman's capsule
(C) Ampulla, Glomerulus
(D) Bowman's capsule, Glomerulus

39. A child is standing in front of a magic mirror. She finds the image of her head bigger, the middle portion of her body of the same size and that of the legs smaller. The following is the order of combinations for the manic mirror from the top.
a) Plane, convex and concave
b) Convex , concave and plane
c) Concave, plane and convex
d) plane, concave and convex

40. An Element A is soft and can be cut with a knife. This is very reactive in air and can't be kept open in air. Identify the element-
a) Magnesium
b) Calcium
c) Lead
d) Sodium

41. In which of the following groups of organisms, food material is broken down outside the body and then absorbed in?
A. mushroom, green plants, amoeba
B. yeast, mushroom, bread mould
C. paramecium, amoeba, cuscuta
D. cuscuta, lice, tapeworm

42. Name the organ where bile is produced

a) Gall Bladder

b) Liver

c) Blood

d) Spleen

43 A convex lens of focal length 15 cm is used to form an image of the size of the object. Where from the lens should be the object is placed?

a) 15 cm

b) 30 cm

c) 60 cm

d) 10 cm

44) A student collects information regarding the refractive index of different medium. He also find out the speed of light in those media and tabulate his data as follows:

Material	Refractive index	Speed of light ms^{-1}
Air	1.00	$3.0x10^8$
Water	1.33	$2.3x10^8$
Perspex	1.49	$2.0x10^8$
Glass	1.50	$2.0x10^8$
Diamond	2.42	$1.2x10^8$

Higher the refractive index, denser is the medium. With help of the table find out that when a light ray travel from glass to water, then it will

a) Bend towards the normal

b) Bends away from the normal

c) Do not bend at all

d) Bend in any direction

45) Real images formed by single convex lenses are always _____.

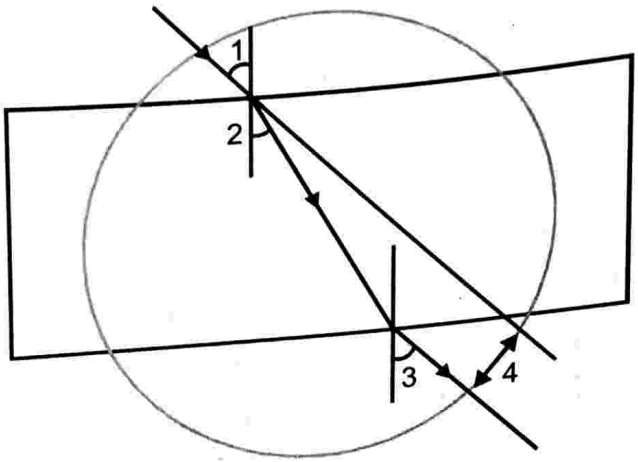
a) On the same side of the lens as the object

b) Inverted

c) Erect

d) Smaller than object

46) The correct sequencing of angle of incidence, angle of emergence, angle of refraction and lateral displacement shown in the following diagram by digits 1, 2, 3 and 4



a) 2,3,4,1

b) 4,3,1,2

c) 1,3,2,4

d) 3,4,1,2

47) 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?

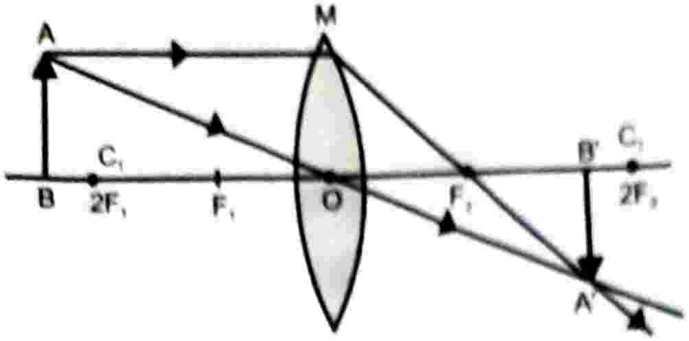
a) Kerosene

b) Water

c) *Mustard oil*

d) *Glycerin*

48) *An object 5 cm in length is held 25 cm away from a converging lens of focal length 10 cm. Find the position, and size of the image formed.*



a) 16.33 cm ,3.33 cm b) 16.66 cm, -3.33 cm

c) 18.33 cm, 4.5 cm d) 15 cm, -2.5 cm

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.

A. Frothing in Yamuna: 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 that 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.

49. 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

50. Which of the following statements is correct for the water with detergents dissolved in it?

(A) low concentration of hydroxide ion (OH^-) and high concentration of hydronium ion ($H3O^+$).

(B) high concentration of hydroxide ion (OH^-) and low concentration of hydronium ion ($H3O^+$).

(C) high concentration of hydroxide ion (OH^-) as well as hydronium ion (H_3O^+)

(D) equal concentration of both hydroxide ion (OH^-) and hydronium ion (H_3O^+)

51. The table provides the pH value of four solutions . Which of the following correctly represents the solutions in increasing order of their hydronium ion concentration?

SOLUTION	pH VALUE
P	2
Q	9
R	5
S	11

(A) P>Q>R>S (B) P>S>Q>R

(C) S<Q<R<P (D) S<P<Q<R

52. High content of phosphate ion in river Yamuna may lead to

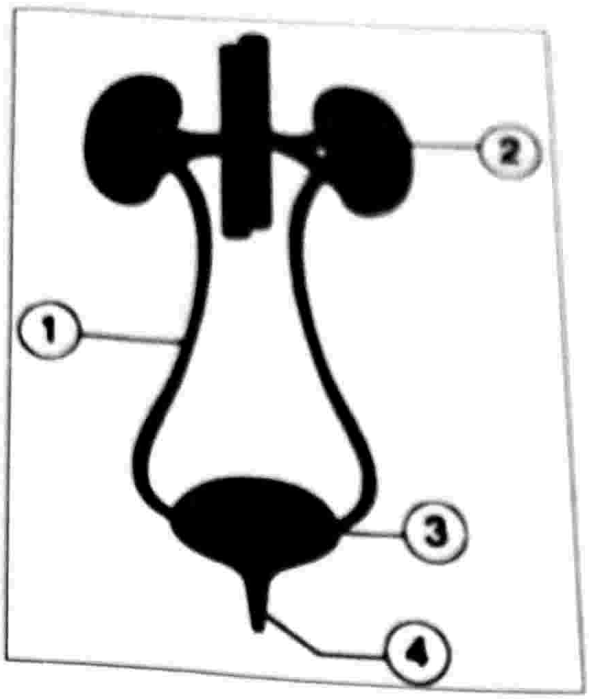
(A) decreased level of dissolved oxygen and increased growth of algae

(B) decreased level of dissolved oxygen and no effect of growth of algae.

(C) increased level of dissolved oxygen and increased growth of algae.

(D) decreased level of dissolved oxygen and decreased growth of algae.

B.



53. Identify the part 1 in excretion.

(A) Kidney
(B) Ureter
(C) Urethra
(D) Nephron

54. Which of these is the structural and functional unit of part 2?

(A) Alveoli
(B) Nephron
(C) Neuron
(D) None of these

55. How can we purify the blood by artificial methods?

(A) Filtration
(B) Dialysis
(C) Reabsorption
(D) All of these

56 . Choose the correct path of urine in our body:

(A) kidney → ureter → urethra →urinary bladder

(B) kidney → urinary bladder →urethra → ureter

(C) kidney → ureters → urinary bladder → urethra

(D) urinary bladder → kidney → ureter →urethra

C. A student focussed the image of a candle flame on a white screen by placing the flame at various distances from a convex lens. He noted his observations as:

	Distance of flame from the lens (cm)	Distance of the screen from the lens (cm)
a	60	20
b	40	24
c	30	30
d	24	40
e	15	70

57. From the above table, find the focal length of lens without using lens formula:

(A) 15cm (B) 30cm

(C) 40cm (D) 60cm

58. Which set of observations is incorrect?

(A) (a) (B) (c)

(C) (e) (D) (d)

59. In which case, the size of the object and image will be same:

(A) In (d) case (B) In (b) case

(C) In (c) case (D) In (a) case

60. Which of the following statement is false for the formation of images by convex lens?

(A) It forms real ,inverted and diminished image.

(B) It forms virtual erect and enlarged image.

(C) It forms virtual, erect, and diminished image.

(D) It forms real, inverted and enlarged image

SAMPLE QUESTION PAPER-3 (TERM 1) 2021-22

SUBJECT : SCIENCE

CLASS : X

Time : 90 minutes **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. *Electrolysis of water is a decomposition reaction. The mole ratio of hydrogen and oxygen gases liberated during electrolysis of water is:*

   A. 1:1 B. 2:1

   C. 4:1 D. 1:2

2. *Dilute hydrochloric acid is added to granulated zinc taken in a test tube. The following observations are recorded. Point out the correct observation:*

   A. *The surface of metal becomes shiny.*

   B. *The reaction mixture turns milky.*

   C. *Odour of a pungent smelling gas recorded.*

   D. *A colourless and odourless Hydrogen gas is evolved.*

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

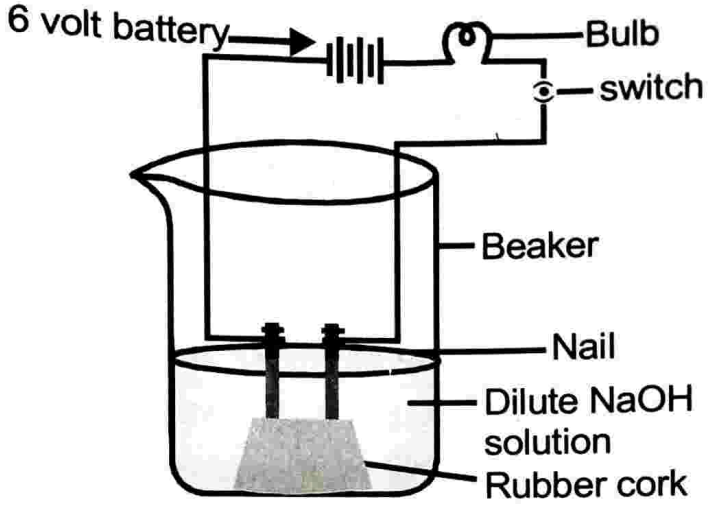
A. Is less than one.

B. Is more than one.

C. Is equal to one.

D. Can be more than or less than one depending upon the position of the object in front of it.

4. In an attempt to demonstrate electrical conductivity through an electrolyte, the following apparatus (see the Figure below) was set up. Which among the following statement(s) is (are) correct?



(i) Bulb will not glow because electrolyte is not acidic.

(ii) Bulb will glow because NaOH is a strong base and furnishes ions for conduction.

(iii) Bulb will not glow because circuit is incomplete

(iv) Bulb will not glow because it depends upon the type of electrolytic solution.

A. (i) and (iii)

B. (ii) and (iv)

C. (ii) only

D. (iv) only

5. Which of the following statements about the given reaction are correct?

$$3Fe(s) + 4H_2O(g) \rightarrow Fe_3O_4(s) + 4H_2(g)$$

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. (iii) and (iv)

C. (i), (ii) and (iv) D. (ii) and (iv)

6. Villi present on the internal walls of intestine help in the

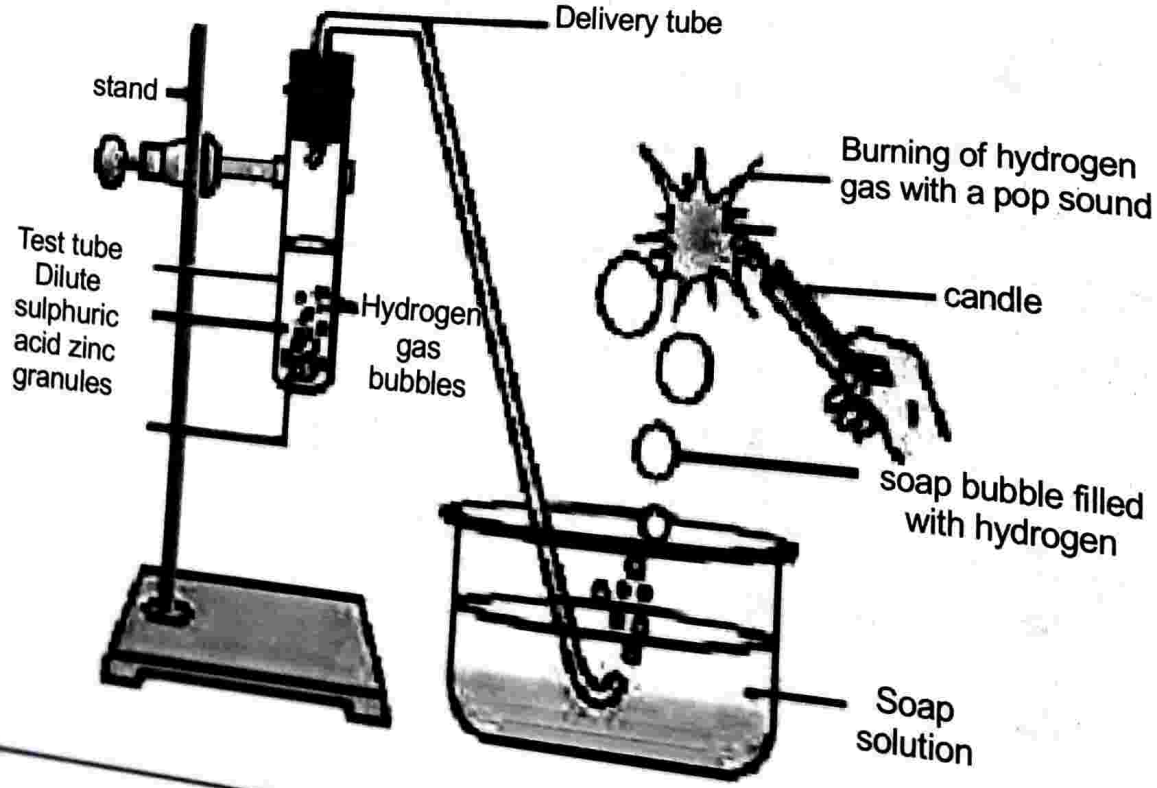
A. Emulsification of fat

B. Breakdown of protein

C. Absorption of digested food

D. Digestion of carbohydrate

7. In the following schematic diagram for the preparation of hydrogen gas as shown in below figure, what would happen if in place of zinc, silver turning is taken?



(i) The temperature of the reaction mixture rises.

(ii) Some bubbles of a colourless and odourless gas is seen.

(iii) Silver metal does not show any change.

(iv) Displacement reaction occurs

Which of the following statements about the given reaction are correct?

A. (i), (ii) and (iii) B. (ii) and (iv)

C. (i), (ii) and (iv) D. (iii) only

8. The doctor measured Ravi's blood pressure and said it is normal now. The range of Ravi's blood pressure (diastolic/ systolic) is likely to be:

A. 80 /120 mm of Hg B. 80/160 mm of Hg

C. 60/120 mm of Hg D. 80/180 mm of Hg

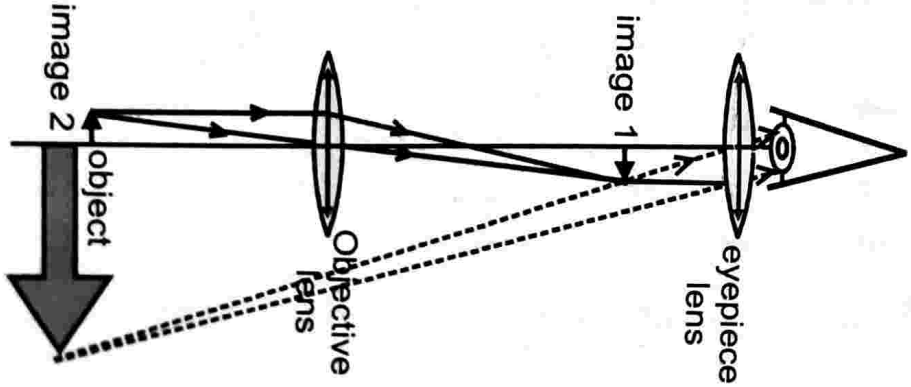
9. What is/are true for ionic compounds?

1. They are solids.
2. They have low melting and boiling points.
3. They are soluble in water.
4. They are good conductors of electricity.

A. 1, 2 and 3 B. 1, 2 and 4

C. 1, 3 and 4 D. 2, 3 and 4

10. Ravi made a compound microscope using two lenses of different focal length as shown in figure below:



What will be the nature of the final image formed by the microscope made by Ravi?

A. Virtual, Inverted and Magnified

B. Virtual, Erect and Magnified

C. Real, Inverted and Magnified

D. Real, Inverted and Diminished

11. Where should the object be placed in front of a convex lens to get a real image of the same size as the object:

A. At the principal focus of the lens

B. At twice the focal length

C. At infinity

D. Between optical center and its principal focus

12. Sodium hydrogen carbonate when added to acetic acid evolves a gas. Which of the following statements is false about the gas evolved?

A. It turns lime water milky.

B. It extinguishes a burning splinter

C. A colourless and odourless gas is evolved

D. It burns with a pop sound

13. Which of the following is the correct route for blood flow in a human?

A. Right atrium → Right ventricle → Lungs → Left atrium → Left ventricle

B. Right atrium → Right ventricle → Left ventricle → Left atrium → Lungs

C. Left atrium → Left ventricle → Right ventricle → Right atrium → Lungs

D. Left atrium → Left ventricle → Right ventricle → Right atrium → Lungs

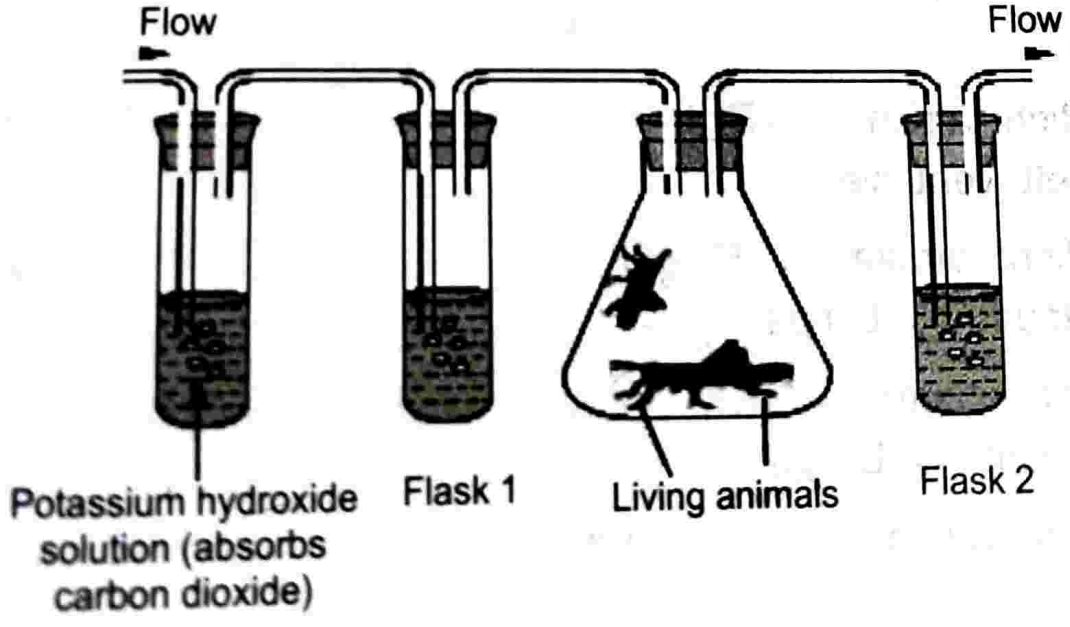
14. Which of the following pair is incorrect.

	Reaction	Reaction Name
A	$CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$	Combustion reaction and oxidation reaction
B	$Pb(NO_3)_2 + 2KI \rightarrow PbI_2 + 2KNO_3$	Double displacement and precipitation reaction
C	$CaO + H_2O \rightarrow Ca(OH)_2$	Combination reaction
D	$CuSO_4 + Zn \rightarrow ZnSO_4 + Cu$	Decomposition reaction

15. In photosynthesis, which substances are used up, which are produced and which are necessary, but remain unchanged after the reaction?

Used up	Produced	Unchanged
A. Water	Oxygen	Chlorophyll
B. Oxygen	Starch	Cellulose
C. Carbon dioxide	Water	Oxygen
D. Chlorophyll	Carbon dioxide	Water

16. An experiment is set up as shown. Flasks 1 and 2 contain lime water. Air is pumped through the flasks.



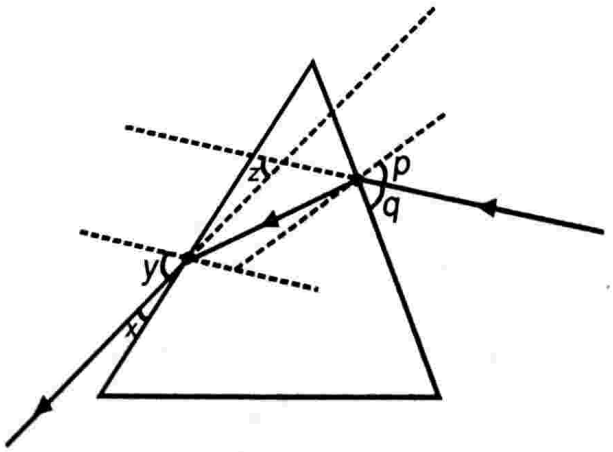
What is the appearance of lime water in flasks 1 and 2 after a period of ten minutes

	Flask 1	Flask 2
(a)	Clear	Clear
(b)	Clear	White/Cloudy
(c)	White/Cloudy	Clear
(d)	White/Cloudy	White/Cloudy

17. The blue colour of water in deep sea is due to:
    A. the presence of algae and other plants found in water
    B. reflection of sky in water
    C. scattering of light
    D. absorption of light by the sea.

18. The refractive index of glass is 3/2. The velocity of light in glass is?
    A. 3×10^8 m/s.
    B. 2×10^8 m/s
    C. 10^8 m/s.
    D. 1.33×10^8 m/s.

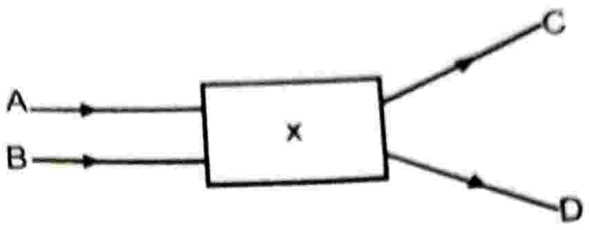
19. Study the following ray diagram



In this diagram, the angle of incidence, the angle of emergence and the angle of deviation respectively have been represented by

A. y, p, z
B. x, q, z.
C. p, y, z.
D. p, z, y.

20. Light rays A and B fall on optical component X and come out as C and D.



The optical component is a

A. concave lens
B. convex lens
C. convex mirror
D. prism.

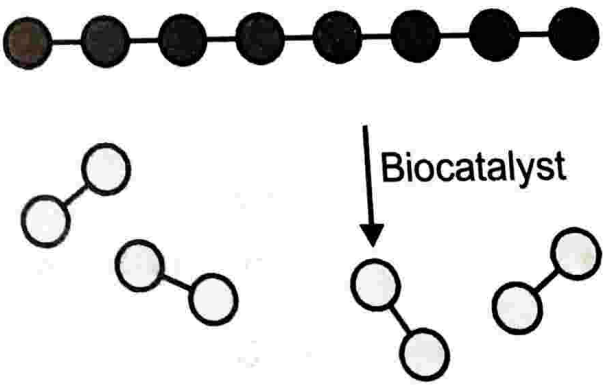
21. A spherical mirror and a thin spherical lens each has a focal length of -15 cm. The mirror and the lens are likely to be.

A. Both concave
B. Both convex
C. The mirror is concave and lens is convex
D. The mirror is convex, but the lens is concave

22. The composition of aqua regia is

A. Dil.HCl : Conc.HNO_3 :: 3 : 1
B. Conc.HCl : Dil.HNO_3 :: 3 : 1
C. Conc.HCl : Conc.HNO_3 :: 3 : 1
D. Dil.HCl : Dil.HNO_3 :: 3 : 1

23. Study the picture below that represents the?



Study the picture below that represents the?

	Biocatalyst also termed as	Biocatalyst found in human saliva	Biocatalyst found in human stomach
A.	Enzymes	Amylase	Pepsin
B.	Hormones	Amylase	Trypsin
C.	Enzymes	Trypsin	Pepsin
D.	Energy	Pepsin	Amylase

24. Although metals form basic oxides, which of the following metals form an amphoteric oxide?

A. Na
B. Ca
C. Al
D. Cu

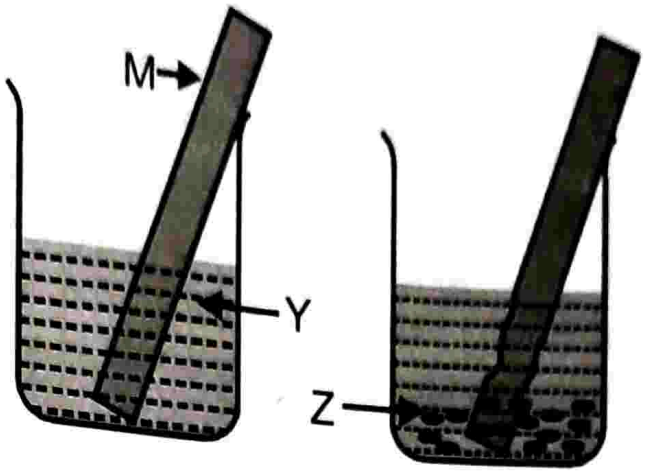
SECTION - B

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 compound can be used to remove Hardness of water permanently?

A. Bleaching powder
B. Baking soda
C. Baking powder
D. Washing soda

26. A metal rod (M) was dipped in a coloured solution (Y). After some time it was observed that the metal rod starts dissolving in the solution and the solution starts fading in colour. However, a coloured precipitate (Z) was seen at the bottom of the beaker. (M), (Y) and (Z) could be



A. M = Zn, Y = $FeSO_4$, Z = Fe

B. M = Cu, Y = $Al_2(SO_4)_3$, Z = Al

C. M = Ag, Y = $CuSO_4$, Z = Cu

D. M = Fe, Y = $ZnSO_4$, Z = Zn

27. In an experiment of pH paper four students take the following observations

Sample	pH paper colour
A. Water	Violet
B. Dilute HCl	Red
C. Dilute NaOH	Blue
D. Dilute ethanoic acid	Orange

Which student takes the incorrect observation?

A. B B. C

C. D D. A

28. One of the constituents of baking powder is sodium hydrogen carbonate, the other constituent is

A. hydrochloric acid

B. tartaric acid

C. acetic acid

D. sulphuric acid

29. Choose the correct statement that describes the arteries

A. They have thick elastic walls, blood flows under high pressure, collect blood from different organs and bring it back to the heart.

B. They have thin walls with valves inside, blood flows under low pressure and carry blood away from the heart to various organs of the body

C. They have thick elastic walls, blood flows under low pressure, carry blood from the heart to various organs of the body

D. They have thick elastic walls without valves inside, blood flows under high pressure and carry blood away from the heart to different parts of the body

30. Name the basic filtration unit of Kidney.

A. Nephron
B. Neuron
C. Alveoli
D. Stomata

Question No. 31 to 34 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: Phenolphthalein gives pink colour in basic solution.

Reason: Phenolphthalein is a natural indicator.

32. Assertion: Magnesium chloride is an ionic compound.

Reason: Metal and non-metal react by mutual sharing of electrons

33. **Assertion**: Colour of sun is red at the time of sunset and sunrise.

Reason: Colour of blue end of spectrum get scattered due to their smaller wavelengths and light reaching earth's surface from sun is rich in red colour end.

34. Assertion: Large concave mirrors are used to concentrate sunlight to produce heat in solar cookers

Reason: Concave mirror converges the light rays falling on it to a point.

35. Select the largest gland of Human body.

A. Salivary Gland
B. Liver
C. Stomach
D. Pancreas

36. 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

37. You are given three media A, B and C of refractive index 1.33, 1.65 and 1.46. The medium in which the light will travel the fastest is?

A. A
B. B
C. C
D. Equal in all three media

38. Which of the following reactions is balanced?

(a) $2NaCl + 2H_2O \rightarrow 2NaOH + 2Cl_2 + H_2$

(b) $Ca(OH)_2 + Cl_2 \rightarrow CaOCl_2 + H_2O$

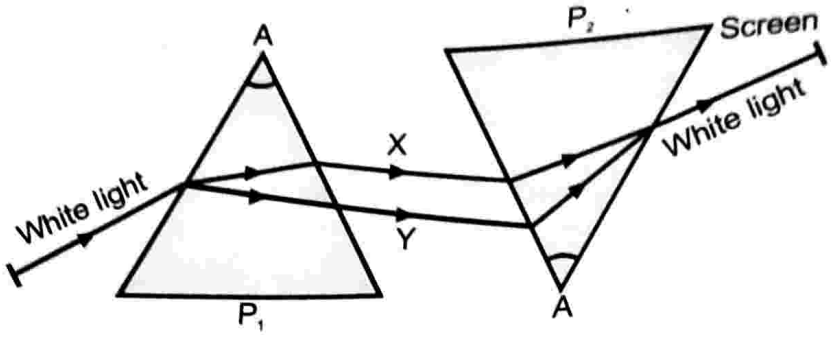
(c) $NH_3 \rightarrow N_2 + H_2$

(d) $C_6H_{12}O_6 + O_2 \rightarrow CO_2 + H_2O$

39. Advanced sunrise and delayed sunset are explained on the basis of?

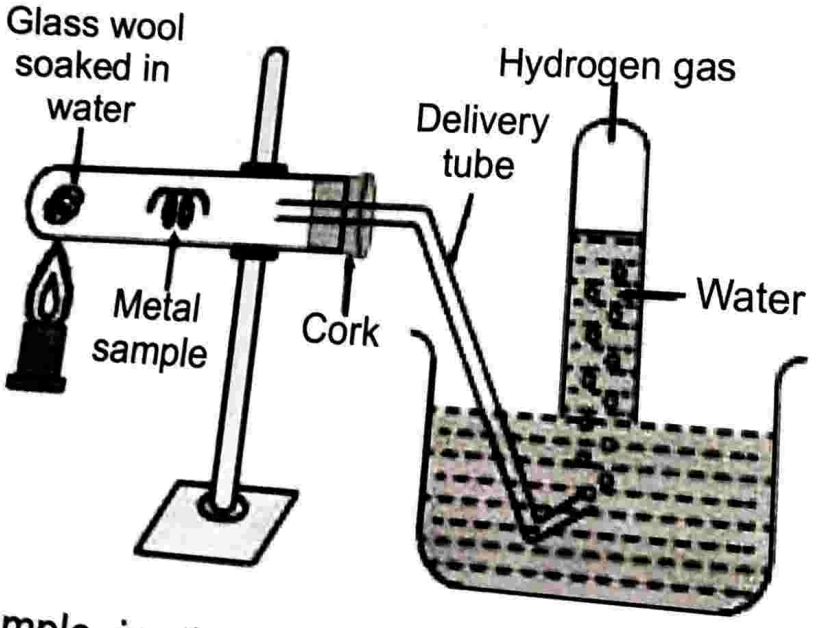
A. Tyndall effect
B. Scattering of light
C. Atmospheric refraction.
D. Dispersion of light

40. Here X and Y indicates:



A. Green colour, violet colour.
B. Red colour, violet colour.
C. Violet colour, red colour.
D. Violet colour, red colour.

41. Action of steam on a metal is shown in the figure:



The metal sample in the above experiment is-

A. Sodium
B. Magnesium
C. Iron
D. Copper

42. Many plant waste products are stored in?

A. Chloroplast

B. Mitochondria

C. Cellular vacuoles

D. Cytoplasm

43. Magnesium ribbon is rubbed with sand paper before making it to burn. The reason of rubbing the ribbon is to?

A. remove moisture condensed over the surface of ribbon

B. generate heat due to exothermic reaction

C. remove magnesium oxide formed over the surface of magnesium

D. mix silicon from sand paper (silicon dioxide) with magnesium for lowering ignition temperature of the ribbon

44. Which one of the following statements is correct?

A. The rainbow is produced by the reflection of white sun light by water drops in the atmosphere

B. The blue colour of the sky is due to scattering of light.

C. The stars appear higher in the sky than actually are due to scattering of light.

D. The planets twinkle at night due to atmospheric refraction of light.

45. The power of a convex lens is 4.0 D. The focal length of this lens will be

A. 0.5 m B. 0.25 m

C. 2.5 m D. 0.05 m

46. A virtual image is formed by convex lens when object is placed

A. between F and O B. at infinity

C. between 2F and F D. at F

47. Pancreatic juice contains which enzymes:

A. Salivary Amylase and Lipase
B. Pepsin, and Lipase
C. Trypsin and Lipase
D. Trypsin, and Bile

48. Oxygenated blood reaches heart by

A. Pulmonary artery
B. Pulmonary vein
C. Aorta
D. Vena cava

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 Four friends went to a picnic. The weather was pleasant. They played various games and then had snacks. Suddenly, Shyam, one of them, noticed seven colours in the sky. He said to others, "Wow, what a rainbow!" Then Ram, one of them, asked him "What is Rainbow"? He then explained to all about its formation. After that everyone in the group thanked him for the knowledge, he had given to them.

49. The device can be used to obtain such phenomenon is:

A. Lens
B. Mirror
C. Prism
D. Glass slab

50. Which of the following phenomena of light are involved in the formation of a rainbow?

A. Reflection, refraction and dispersion.
B. Reflection, dispersion and total internal reflection
C. Refraction, dispersion and internal reflection
D. Dispersion, scattering and total internal reflection

51. Rainbow is observed when the Sun is

A. Vertically above the observer

B. Behind the observer

C. In front of the observe

D. Position is not defined

52. When white light is passed through two consecutive prisms(One prism is inverted) the resultant will be:

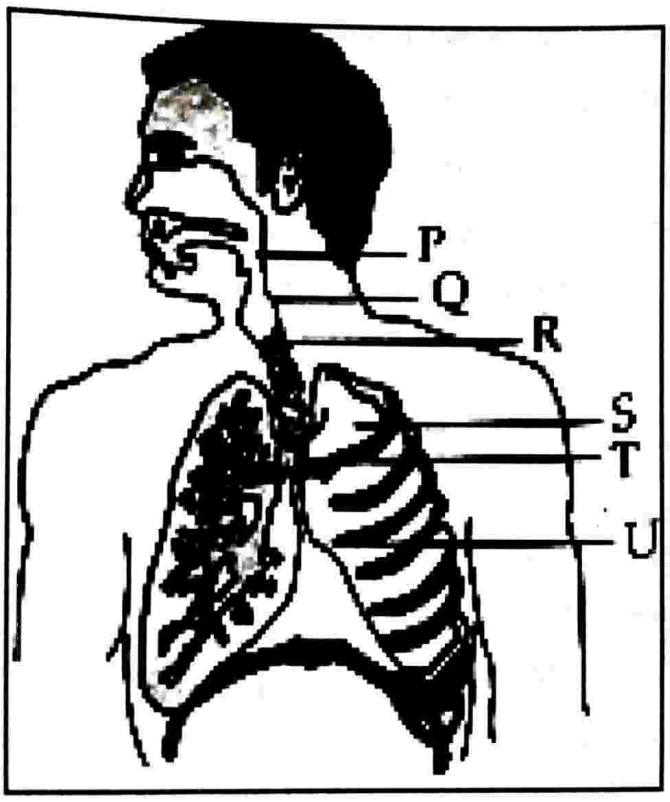
A. Seven colour

B. White beam

C. Red light

D. Yellow light

Case Study the diagram of human respiratory system and answer the following questions.



53. The balloon like structure present in S is?

A. Nephron B. Alveoli

C. Bronchi D. Bronchiole

54. Which of the following organs is surrounded by Rings of cartilage?

A. P B. Q

C. R D. S

55. Which of the following is a function of the balloon like structure present in lungs?

A. Exchange of gases

B. Absorption of nutrients

C. Transport of food

D. Removal of waste materials

56. The structure which prevents the entry of food into the respiratory tract is :

A. Pharynx B. Larynx

C. Epiglottis D. Glottis.

Case: The reactivity series is a list of metals arranged in the order of their decreasing activities.

The metal at the top of the reactivity series is the most reactive and metal at the bottom is the least reactive. The more reactive metal displaces less reactive metal from its salt solution..

Reactivity Series of Metals

Potassium	K
Sodium	Na
Calcium	Ca
Magnesium	Mg
Aluminium	Al
Zinc	Zn
Iron	Fe
Tin	Sn
Lead	Pb
[Hydrogen]	[H]
Copper	Cu
Mercury	Hg
silver	Ag
Gold	Au

(Most reactive metal)

↓

(Least reactive metal)

57. The metals which react with steam but not with hot water is?

A. Al, Zn, Fe
B. K, Na, Mg
C. Ag and Au
D. Pb and Cu

58. Which of the following metal give hydrogen gas on reacting with dilute nitric acid?

A. Mg
B. Al
C. Ca
D. Fe

59. Which of the following pair of reactants will give displacement reactions?

A. $FeSO_4$ solution and lead metal
B. $CuSO_4$ solution and silver metal
C. NaCl solution and iron metal
D. $AgNO_3$ solution and Copper metal

60. What happens when calcium is treated with water?

1. It does not react with water.
2. It reach violently with water.
3. It reacts less violently with water.
4. Bubbles of hydrogen gas formed stick to the surface of calcium

A. 1 and 4
B. 2 and 3
C. 1 and 2
D. 3 and 4.

QUESTIONS IN LIEU OF DIAGRAM BASED QUESTIONS FOR VI CANDIDATES

TOTAL ALTERNATIVE QUESTIONS – 26

SECTION – A

4. What will be the pH of a solution which has equal concentrations of H+ and OH– ions?

A. 5.6 B. 6.3

C. 7.0 D. 9.0

7. Which of the following observations will be made when a copper coin is placed in a test tube containing ferrous sulphate solution?

A. The ferrous sulphate solution will turn blue and a grey substance will be deposited on the copper coin

B. The ferrous sulphate solution will turn colourless and a grey substance will be deposited on the copper coin

C. The ferrous sulphate solution will turn colourless and a reddish–brown substance will be deposited on the copper coin

D. No change will occur

10. A ray of light strikes a glass slab at 90°. The angle of incidence is?

A. 90° B. 0°

C. 45° D. less than 90°

16. Choose the event that does not occur in photosynthesis

A Absorption of light energy by chlorophyll

B Reduction of carbon dioxide to carbohydrates

C. Oxidation of carbon to carbon dioxide

D. Conversion of light energy to chemical energy

19. The danger signals installed at the top of tall buildings are red in colour. These can be easily seen from a distance because among all other colours, the red light

A. is scattered the most by smoke or fog

B. is scattered the least by smoke or fog

C. is absorbed the most by smoke or fog

D. moves the fastest in air

20. A small bulb is placed at the focal point of a converging lens. When the bulb is switched on, the lens produces

A. a convergent beam of light

B. a divergent beam of light

C. a parallel beam of light

D. a patch of coloured light

23. Four chambered heart?

A. Prevents mixing of oxygenated and deoxygenated blood.

B. Allows mixing of oxygenated and deoxygenated blood.

C. Is found in cold blooded animals.

D. None of the above

SECTION – B

26. Which of the following metals will not release hydrogen gas when added to dilute HCl

A. Magnesium B. Calcium

C. Zinc D. Silver

30. The human kidney excretes nitrogenous waste majorly in the form of

A. Ammonia B. Amino acid

C. Uric acid D. Urea

40. A child is standing in front of a magic mirror. She finds the image of her head bigger, the middle portion of her body of the same size and that of the legs smaller. The following is the order of the combinations for the magic mirror from top to bottom.

A. Plane, convex and concave

B. Convex, concave and plane

C. Concave, plane and convex

D. Convex, plane and concave

41. A student took four test tubes and labelled them as A, B, C and D. He added equal volume of freshly-prepared copper sulphate to each test tube. He added a clean iron nail, a zinc granule, a piece of clean magnesium ribbon and a piece of clean silver wire to test tubes A, B, C and D respectively. In which test tube, the blue colour of the copper sulphate solution will not disappear

A. Test tube A

B. Test tube B

C. Test tube C

D. Test tube D

SECTION – C

Most living things need oxygen to obtain energy from food. The oxygen reacts with food molecules and that is how energy is obtained which is stored in the form of ATP molecules in the cells. This energy can be used anywhere the body wants to do so. The process of releasing energy from food is called respiration.

53. What is the full form of ATP ?

A. Adenosine triphosphate

B. Adenosine tetraphosphate

C. Adenosine monophosphate

D. None of the above

54. The form of energy used in respiration is

A. Electrical energy

B. Chemical energy

C. Mechanical energy

D. Radiant energy

55. Respiration is the process in which

A. Energy is released and stored in the form of ATP

B. Energy is stored in the form of ADP

C. Energy is not released at all

D. Energy is used up

56. How many types of respiration are there?

A. 1

B. 4

C. 2

D. None of the above

SAMPLE QUESTION PAPER-4 (TERM 1) 2021-22

SUBJECT : SCIENCE

CLASS : X

Time : 90 minutes **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 statements about the autotrophs is incorrect?

   A. They store carbohydrates in the form of starch

   B. They convert CO_2 and water into carbohydrates in the absence of sunlight

   C. They constitute the first trophic level in food chains

   D They synthesize carbohydrates from CO_2 and water in the presence of sunlight & chlorophyll

2. Magnesium imparts:

   A. Yellowish orange colour flame

   B. Brick red colour flame

C. Dazzling white colour flame

D. None of these

3. The element or compound which undergoes reduction is

A. Reducing agent

B. Oxidizing agent

C. Dehydrating agent

D. Bleaching agent

4. The magnification of the plane mirror is:

A. Infinite

B. 0.0

C. 2.0

D. 1.0

5. The values of f and u for a concave lens are always:

A. Negative

B. Positive

C. Neutral

D. None of these

6. Which of the following will turn red litmus blue?

(i) Amla juice (ii) Lemon juice (iii) Baking soda

(iv) Soft drink (v) Tamarind (vi) Soap

A. (i) and (iii)

B. (ii), (v) and (vi)

C. (iii) and (vi)

D. (iii), (iv) and (vi)

7. Name the tissue in a leaf where plastids are present:

A. Endodermis

B. Mesophyll

C. Epithelial cell

D. Mitochondria

8. While positioning the pins (during glass slab activity on refraction of light), it is arranged such that:

A. The foots of the pins are in perpendicular line

B. The heads of the pins are in the straight line

C. The mid-points of the pins are in the straight line

D. The foots of the pins are in straight line

9. In which of the following chemical equations, the abbreviations represent the correct states of the reactants and products involved at reaction temperature?

A. $2H_2(g) + O_2(g) \longrightarrow 2H_2O(\ell)$

B. $2H_2(g) + O_2(\ell) \longrightarrow 2H_2O(\ell)$

C. $2H_2(\ell) + O_2(g) \longrightarrow 2H_2O(g)$

D. $2H_2(g) + O_2(g) \longrightarrow 2H_2O(g)$

10. Colour of copper sulphate solution changes when an iron nail is dipped in it because of:

A. Displacement reaction

B. Oxidation reaction

C. Combination reaction

D. Decomposition reaction

11. What compound is formed when magnesium oxide is passed through water?

A. Sulphuric acid

B. Magnesium hydroxide

C. Hydrogen sulphide

D. Sulphur trioxide

12. Rainbow is formed due to a combination of:

A. Refraction

B. Absorption

C. Dispersion

D. Total internal reflection

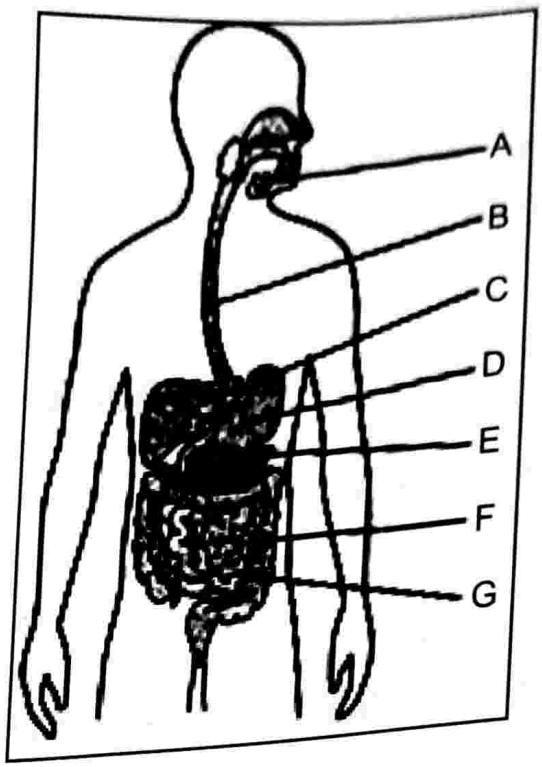
A. A and B

B. A and C

C. A, C and D

D. A, B and C

Refer the diagram given below for the question 13 & 14.



13. Villi are present in:

A. D
B. E
C. F
D. A

14. The enzyme that is released by 'label A' helps in digestion of:

A. Protein
B. Carbohydrates
C. Fat
D. Vitamin

15. Gas bubbles are observed when sodium carbonate is added to dilute hydrochloride acid. The gas evolved is

A. Oxygen
B. Hydrogen
C. Carbon dioxide
D. None of these

16. Generally, non-metals are not lustrous. Which of the following nonmetal is lustrous?

A. Iodine
B. Nitrogen
C. Sulphur
D. Oxygen

17. Metal always found in free state is:

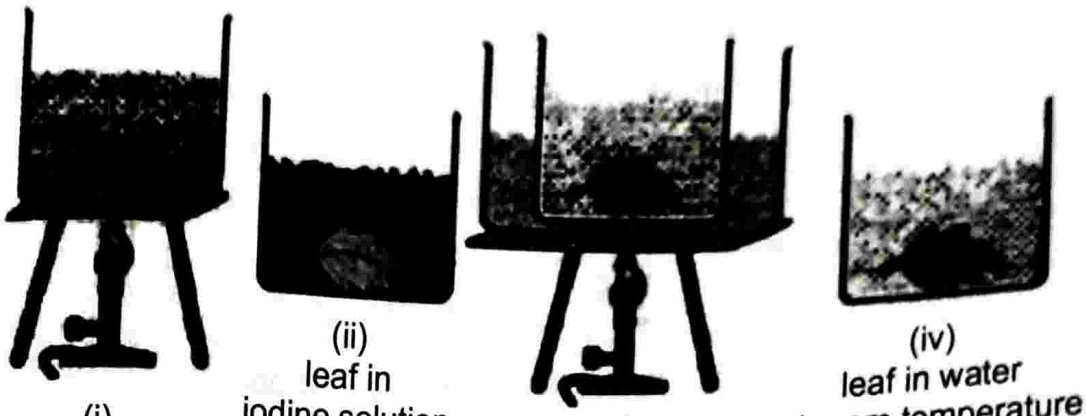
A. Platinum

B. Gold

C. Both A and B

D. None

18. A student performed the starch test on a leaf. Some steps involved are shown below.



(i) leaf in boiling water

(ii) leaf in iodine solution

(iii) leaf in ethanol heated in water bath

(iv) leaf in water at room temperature

The correct sequence of steps should be:

A. (iv), (iii), (ii), (i)

B. (i), (ii), (iii), (iv)

C. (ii), (iii), (iv), (i)

D. (i), (iii), (iv), (ii)

19 A concave mirror gives real, inverted and same size image if the object is placed:

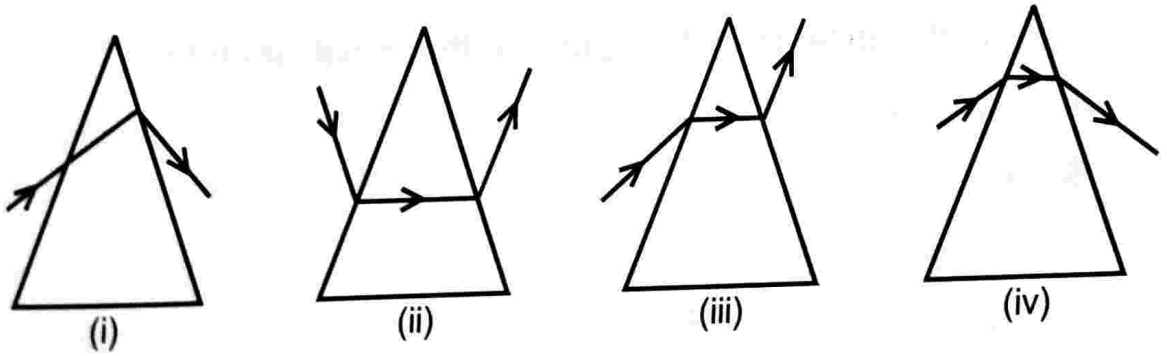
A. Beyond C

B. At F

C. At C

D. At infinity

20 Four students traced the path of light ray through a glass prism. The student who has traced the path correctly is-



(i) (ii) (iii) (iv)

A. I

B. II

C. III

D. IV

21. Which of the following phenomenon contributes significantly to the reddish appearance of the sun at sunrise and sunset?

A. Total internal Reflection

B. Dispersion of light

C. Reflection of light from the earth

D. Scattering of light

22. Type of respiration seen during fermentation:

A. Aerobic

B. Anaerobic

C. Reduction

D. Oxidation

23. The angle between incident ray and produced emergent ray of a prism is called:

A. Angle of Refraction

B. Angle of deviation

C. Angle of incidence

D. Angle of emergence

24. The pH that leads to tooth decay is

A. Above 7

B. At 7

C. Below 5.5

D. Above 5.5

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 these is not a part of the small intestine?

A. Jejunum

B. Rectum

C. Duodenum

A. Ileum

26. What happens when dilute hydrochloric acid is added to iron fillings? Tick the correct answer.

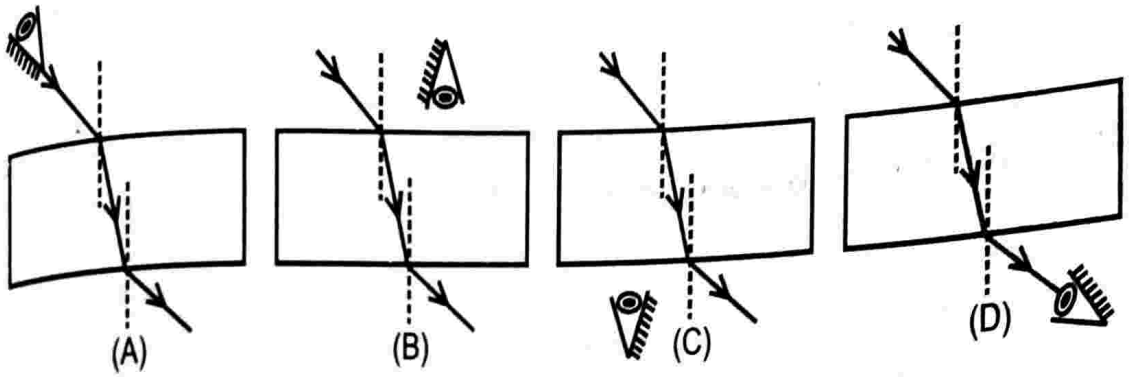
A. Hydrogen gas and iron chloride are produced.

B. Chlorine gas and iron hydroxide are produced.

C. No reaction takes place.

D. Iron salt and water are produced.

27. The correct position of eye for observing the emergent ray in the experiment with glass slab is:



A. A B. B

C. C D. D

28. The filtration units of Kidneys are called

A. Ureter B. Urethra

C. Neurons D. Nephrons

29. Which of the following metal is less reactive than hydrogen?

A. Zinc B. Copper

C. Magnesium D. Lead

30. Where will the image be formed if the object is at the focus of the concave mirror?

A. At infinity B. At C

C. Beyond C D. Between C and F

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:** Decomposition of vegetable matter into compost is an example of exothermic reactions.

Reason: Exothermic reactions are those reactions in which heat is evolved.

32. **Assertion:** As the temperature of a medium increases the refractive index decreases.

Reason: When a ray travels from a vacuum to a medium, then is known as the absolute refractive index of the medium. $((\mu_{vaccum} = 1).)$.

33. **Assertion:** Brown fumes are produced when lead nitrate is heated.

Reason: Nitrogen dioxide gas is produced as a byproduct due to the decomposition of lead nitrate.

34. **Assertion:** Alveoli contain an extensive network of blood vessels

Reason: Alveoli is the site where exchange of gases occurs.

35. To determine the focal length of a concave mirror, a student focuses a distant object using the concave mirror. The distant object can be:

A. A distant tree

B. Street light

C. Sun

D. All of these

36. Which of the following equations is the summary of photosynthesis?

A. $6CO_2 + 12H_2O \xrightarrow{Chlorophyll + Sunlight} C_6H_{12}O_6 + 6O_2 + 6H_2O$

B $6CO_2 + 12H_2O \xrightarrow{Chlorophyll + Sunlight} C_6H_{12}O_6 + 6CO_2 + 6H_2O$

C $6CO_2 + 12H_2O \longrightarrow C_6H_{12}O_6 + 6O_2 + 6H_2O$

D $6CO_2 + 12H_2O \xrightarrow{Chlorophyll} C_6H_{12}O_6 + 6O_2 + 6H_2O$

37 Red light is least affected by atmospheric refraction due to:

A. Highest frequency

B. Dark colour

C. Shortest wavelength

D. Longest wavelength

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

A. Translocation

B. Transpiration

C. Peristaltic movement

D. Digestion

39. The lateral displacement of an incident ray passing out of a rectangular glass slab:

A. Independent of the thickness of the glass slab.

B. Is directly proportional to the thickness of the glass slab.

C. Inversely proportional to the thickness of the glass slab.

D. None of these

40. Under the high power objective lens of a microscope, an epidermal peel of a leaf shows:

A. Stomata surrounded by several vascular cells each

B. Stomata surrounded by several phloem fibers

C. Stomata surrounding by a pair of guard cells each

D. Stomata surrounding many cortex cells

41. We will observe white precipitate in which of the following reaction?

A. Barium chloride is mixed with hydrochloric acid

B. Barium chloride is mixed with sodium chloride solution

C. Barium chloride is mixed with sodium sulphate solution

D. Barium carbonate is mixed with sodium sulphate solution

42 At noon, the Sun appears white as:

A. Blue colour is scattered the most

B. Red colour is scattered the most

C. Lightis least scattered

D. All the colours of the white light are scattered away

43. Which among the following statement(s) is (are) true? Photographic film exposed to light turns black 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) & (iii)

C. (ii) & (iii)

D. (iv) only

44. An element reacts with oxygen to give a compound with a high melting point. This compound is also soluble in water. The element is likely to be:

A. Iron

B. Calcium

C. Carbon

D. Silicon

45. Copper turns green due to formation of:

A. Copper oxide

B. Copper sulphide

C. Copper carbonate

D. Copper oxalate

46. Which mirror is used by dentists while observing teeth

A. Concave mirror
B. Convex mirror
C. Plane mirror
D. All of the above

47. Which one of the following will have the lowest hydrogen ion concentration?

A. pH = 1.1
B. pH = 2.2
C. pH = 3.3
D. pH = 4.4

48. The reaction between lead nitrate and potassium iodide is an example of:

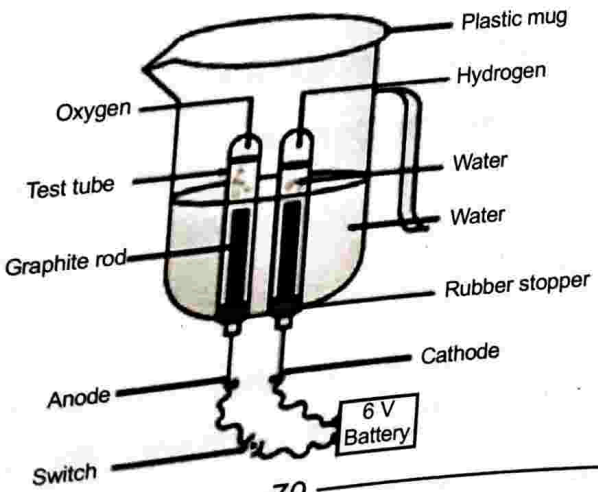
A. Combination reaction
B. Decomposition reaction
C. Displacement reaction
D. Double displacement reaction

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 :

Hari took a plastic mug, drill two holes at its base and insert graphite electrodes. He connected these electrodes to a 6 volt battery. Then he filled the mug with water such that the electrodes were immersed. He added a few drops of dilute sulphuric acid to the water.



Finally he took two test tubes filled with water and inverted them over the two graphite electrodes. Then he switched on the current and left the apparatus undisturbed for some time.

49. What is the ratio by volume in which hydrogen and oxygen are collected in the test tube?

A. 1:2

B. 1:1

C. 2:1

D. 1:8

50. Which electrodes are used in this activity?

A. Graphite

B. Diamond

C. Copper

D. Coke

51. Where is hydrogen gas collected?

A. Anode

B. Cathode

C. At both electrodes

D. Hydrogen gas is not evolved in this activity

52. Which of the following is not an exothermic process?

A. Dilution of Sulphuric acid

B. Condensation of water vapours

C. Respiration in human beings

D. Electrolysis

CASE II

Atmospheric refraction is the phenomenon of bending of light on passing through earth's atmosphere. As we move above the

surface of earth, density of air goes on decreasing. Local conditions like temperature etc. also affect the optical density of earth's atmosphere. On account of atmospheric refraction, stars seen appear higher than they actual are; advanced sunrise; delayed sunset, oval appearance of the sun at sunrise and sunset; stars twinkle, planets do not.

53 Due to atmospheric refraction, apparent length of the day:

A. Increases

B. Decreases

C. Remains the same

D. All of these

54. Apparent position of the star appears raised due to:

A. Atmospheric refraction

B. Scattering of light

C. Both (A) & (B)

D. None of these

55. The sun appears oval shaped or flattened due to:

A. Dispersion

B. Scattering

C. Atmospheric refraction

D. Cannot say

56. Twinkling of stars and non-twinkling of planets is accounted for by:

A. Scattering of light

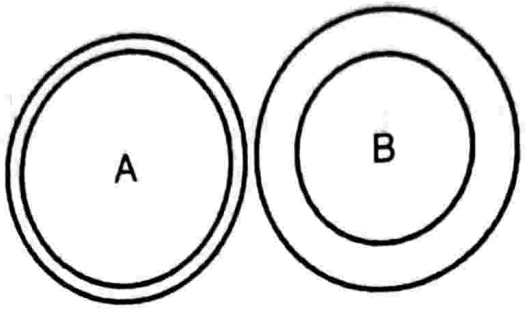
B. Dispersion of light

C. Atmospheric refraction

D. None of these

CASE III

Given are the sections of two pipes, A and B. One represents artery and the other represents veins. Answer the following questions based on the picture below.



57 In A, valves are present to check backward flow of blood flowing at:

A. Atmospheric pressure
B. High pressure
C. Low pressure
D. All of these

58. Which of the following statements is correct regarding A?

A. Carries blood from an organ towards the heart
B. Always carry oxygenated blood with single exception
C. Carries blood from heart towards the organ
D. All of these

59. Which of these statements is incorrect?

A. A has typically larger lumen than B
B. Walls of B are elastic enabling them to stretch and shrink during changes in blood pressure
C. Flow of blood is slower in A than in B
D. None of these

60 All arteries carry oxygenated blood from the heart to the other parts of the body except

A. Hepatic artery
B. Renal artery
C. Pulmonary Artery
D. Aorta

Questions in lieu of diagram based questions for VI candidates

SECTION A

13 Villi is present in

A. Stomach

B. Large Intestine

C. Small Intestine

D. Rectum

14 Bile Juice is secreted by

A. Gall Bladder

B. Liver

C. Pancreas

D. Salivary Gland

18 A few drops of Iodine solutions were added to rice water. The solution turned blue black in colour. This indicates that rice water contains

A. Complex proteins

B. Simple proteins

C. Fats

D. Starch

20 In an experiment to trace the path of a ray of light through a triangular glass prism, a student would observe that the emergent ray

A. Is parallel to the incident ray

B. Is along the same direction of the incident ray

C. Gets deviated and bends towards the thinner part of the prism

D. Gets deviated and bends towards the thicker (base) part of the prism

SECTION B

27 When a beam of light moves from a rarer medium to a denser medium

A. It bends towards the normal

B. It bends at 90o

C. It goes undeviated

D. It bends away from the normal

SECTION C

Case I

Hari took a plastic mug, drill two holes at its base and insert graphite electrodes. He connected these electrodes to a 6 volt battery. Then he filled the mug with water such that the electrodes were immersed. He added a few drops of dilute sulphuric acid to the water.

Finally he took two test tubes filled with water and inverted them over the two graphite electrodes. Then he switched on the current and left the apparatus undisturbed for some time.

Hydrogen gas is collected at cathode.

49 What is the ratio by volume in which hydrogen and oxygen are collected in the test tube?

A. 1:2 B. 1:1

C. 2:1 D. 1:8

50. Which electrodes are used in this activity?

A. Graphite

B. Diamond

C. Copper

D. Coke

51. Where is hydrogen gas collected?

A. Anode

B. Cathode

C. At both electrodes

D. Hydrogen gas is not evolved in this activity

52. Which of the following is not an exothermic process?

A. Dilution of Sulphuric acid

B. Condensation of water vapours

C. Respiration in human beings

D. Electrolysis

Case III

Arteries are the vessels which carry blood away from the heart to various organs of the body. Since the blood emerges from the heart under high pressure, the arteries have thick, elastic walls. Veins collect the blood from different organs and bring it back to the heart. They do not need thick walls because the blood is no longer under pressure, instead they have valves that ensure that the blood flows only in one direction.

57. In ceins, valves are present to check backward flow of blood flowing at:

A. Atmospheric pressure

B. High pressure

C. Low pressure

D. All of these

58. Which of the following statements is correct regarding Veins?

A. Carries blood from an organ towards the heart

B. Always carry oxygenated blood with single exception

C. Carries blood from heart towards the organ

D. All of these

59. Which of these statements is incorrect?

A. Veins have typically larger lumen than Arteries

B. Walls of arteries are elastic enabling them to stretch and shrink during changes in blood pressure

C. Flow of blood is slower in Veins than in Arteries

D. None of these

60. All arteries carry oxygenated blood from the heart to the other parts of the body except

A. Hepatic artery

B. Renal artery

C. Pulmonary Artery

D. Aorta

SAMPLE QUESTION PAPER-5 (TERM 1) 2021-22

SUBJECT : SCIENCE

CLASS : X

Time : 90 minutes **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 the section. The first attempted 20 questions would be evaluated.

1. A student has focused on the screen of a distant building using a convex lens. If he has selected a blue-colored building as an object, select from the following options the one which gives the correct characteristics of the image formed on the screen.

(a) Virtual, erect, diminished and green shade

(b) Real, inverted, diminished and in violet shade

(c) Real, inverted, diminished and in blue shade

(d) Virtual, inverted, diminished and in blue shade

2. The refractive index of four substances P, Q, R and S are 1.50, 1.36, 1.77 and 1.31 respectively. The speed of light is maximum in the substance:

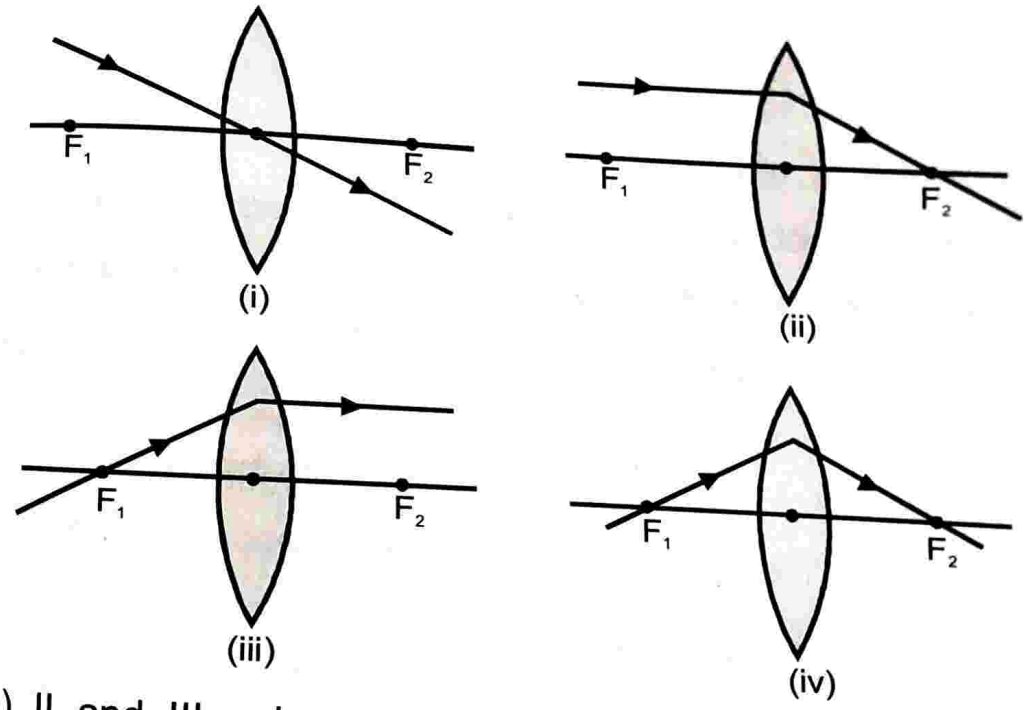
(a) P

(b) Q

(c) R

(d) S

3. The diagrams showing the correct path of the ray after passing through the



(a) II and III only

(b) I and II only

(c) I, II and III

(d) I, II and IV

4. The speed of light in air is 3×10^8 m/s, whereas speed of light in water is 2.26×10^8 m/s. What is the refractive index of water with respect to air?

(a) 2.64

(b) 1

(c) 1.32

(d) 0.75

5. Choose the event that does not occur in photosynthesis.
(a) Absorption of light energy by chlorophyll
(b) Reduction of carbon dioxide to carbohydrates
(c) Oxidation of carbon-to-carbon dioxide
(d) Conversion of light energy to chemical energy

6. Which is the correct sequence of air passage during inhalation?
(a) Nostrils → Larynx → Pharynx → Trachea → Lungs
(b) Nasal passage → Trachea → Pharynx → Larynx → Alveoli
(c) Larynx → Nostrils → Pharynx → Lungs
(d) Nostrils → Pharynx → Larynx → Trachea → Alveoli

7. The Xylem in plants is responsible for:
(a) Transport of water
(b) Transport of food
(c) Transport of amino acids
(d) Transport of oxygen

8. The contraction and expansion movement of the walls of the food pipe is called:
(a) translocation
(b) transpiration
(c) peristaltic movement
(d) digestion

9. 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)

10. Galvanisation is a method of protecting iron from rusting by coating with a thin layer of
(a) Gallium
(b) Aluminium
(c) Zinc
(d) Silver

11. Generally, metals are solid in nature. Which one of the following metals is found in liquid state at room temperature?

(a) Na (b) Fe

(c) Cr (d) Hg

12. Name the substances build up in the muscles during vigorous physical exercise may cause cramps?

(a) Ethanol + Carbon dioxide + Energy

(b) Lactic acid + Energy

(c) Carbon dioxide + Water + Energy

(d) Pyruvate

13. Which of the following statement is true for acids?

(a) Bitter and change red litmus to blue.

(b) Sour and change red litmus to blue.

(c) Sour and change blue litmus to red.

(d) Bitter and change blue litmus to red

14. Common salt besides being used in the kitchen 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 (III)

(c) (I) and (III)

(d) (I), (III) and (IV)

15. 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

16. An ant's sting can be treated with .....which will neutralise the effect of the chemical injected by the ant's sting into our skin. Choose the correct option from the following to be filled in the blank space:

(a) Methanoic acid
(b) formic acid
(c) Baking soda
(d) Caustic soda

17. The condition produced by aerial oxidation of fats and oils in foods marked by unpleasant smell and taste is called:

(a) antioxidation
(b) reduction
(c) rancidity
(d) corrosion

18. The respiration process during which glucose undergoes slow combustion by combining with oxygen in the cells of our body to produce energy, is a kind of:

(a) Exothermic process
(b) Endothermic process
(c) Reversible process
(d) Physical process

19. A plant gets rid of excess water through transpiration. Which is a method used by plants to get rid of solid waste products?

(a) Dropping down of fruits
(b) Expansion of roots into the soil
(c) Shedding of yellow leaves
(d) Shortcoming of stem

20. Which among the following is (are) true about slaking of lime and the solution formed?

(I) It is an endothermic reaction.
(II) It is an exothermic reaction.
(III) The pH of the resulting solution will be more than seven.
(IV) The pH of the resulting solution will be less than seven.

(a) (1) and (II)
(b) (II) and (III)
(c) (1) and (IV)
(d) (III) and (IV)

21. Twinkling of stars is due to atmospheric

(a) dispersion of light by water droplets

(b) refraction of light by different layers of varying refractive indices

(c) scattering of light by dust particles

(d) internal reflection of light by clouds

22. The danger signals installed at the top of tall buildings are red in colour. These can be easily seen from a distance because among all other colours, the red light

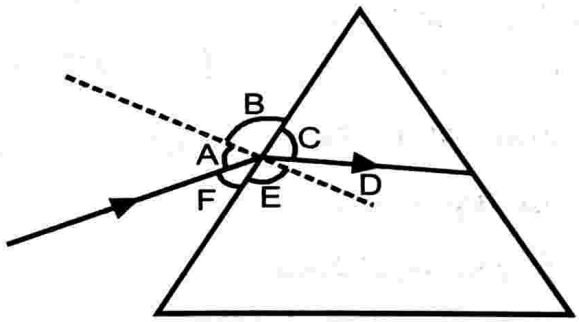
(a) is scattered the most by smoke or fog.

(b) is scattered the least by smoke or fog.

(c) is absorbed the most by smoke or fog.

(d) moves fastest in air.

23. The image shows a light ray incident on a glass prism.



The various angles are labelled in the image. Which angle shows the angle of incidence and angle of refraction, respectively?

(a) A and D (b) B and E

(c) C and F (d) D and F

24. Name the scientist who was the first to use a glass prism to obtain the spectrum of sunlight.

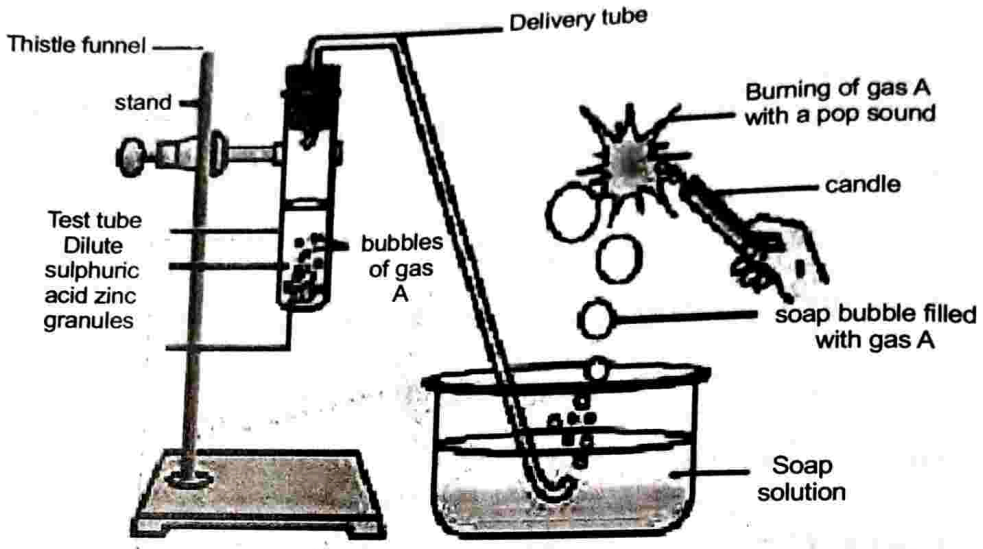
(a) Isaac Newton (b) Einstein

(c) Kepler (d) Hans Christian Oersted

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. Identify gas A in the following experiment.



(a) Nitrogen (b) Hydrogen

(c) Oxygen (d) Carbon dioxide

26. When crystals of lead nitrate are heated strongly in a dry test tube

(a) crystals immediately melt

(b) brown fumes are produced

(c) white fumes appear in the tube

(d) a black residue is left

27. The filtration unit of the kidney is_____.

(a) Urethra (b) Ureter

(c) Neuron (d) Nephron

28. Which of the following statement is true about heart?

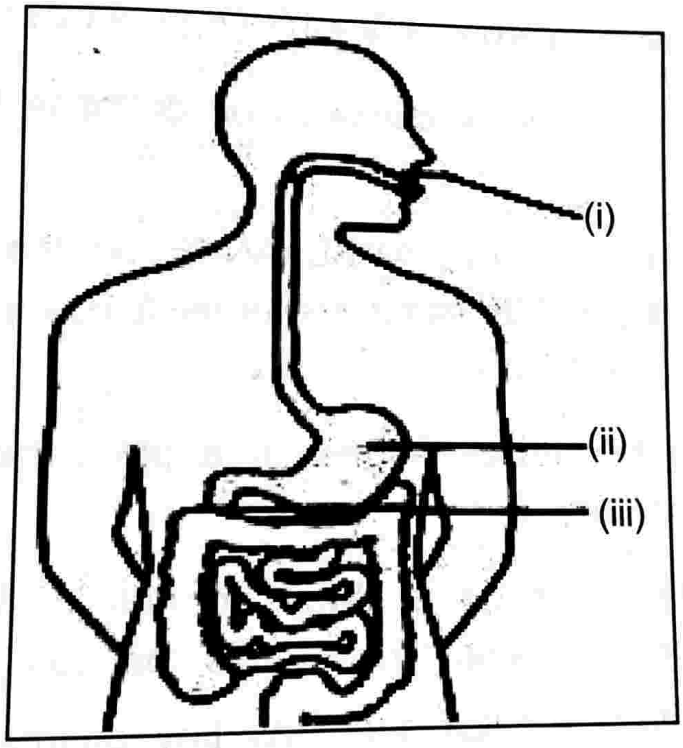
(a) Left atrium receives oxygenated blood from different parts of body while right atrium receives deoxygenated blood from lungs

(b) Left ventricle pumps oxygenated blood to different body parts while right ventricle pumps deoxygenated blood to lungs

(c) Left atrium transfers oxygenated blood to the right ventricle which sends it to different body parts

(d) Right atrium receives oxygenated blood from different parts of the body while left ventricle pumps oxygenated blood to different parts of the body.

29. Identify the option that indicates the correct enzyme that is secreted in location i, ii and iii.



(a)(i)-lipase (ii)-trypsin (iii)-pepsin

(b)(i)-amylase (ii)-pepsin (iii)-trypsin

(c)(i)-trypsin (ii)-amylase (iii)-carboxylase

(d)(i)-permease (ii)-carboxylase (iii)-oxidase

30. Three chambered heart is found in

(a) Frog

(b) Lizard

(c) Snake

(d) All of the above

Question No. 31 to 34 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 Rare 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 (A):** Following is a balanced chemical equation for the action of steam on Iron: $3Fe+4H_2O(g) \rightarrow Fe_3O_4+4H_2$

Reason (R): The law of conservation of mass holds good for a chemical equation.

32. **Assertion (A):** The word AMBULANCE on the hospital vans is written in the form of its mirror image as ƎƆИAꓶUꓶMA in inverted form.

Reason (R): The image formed in a plane mirror is the same size as the object.

33. **Assertion (A):** A rainbow is always formed in the sky after a rain shower and in the same direction as the sun.

Reason **(R):** Water droplets act as tiny prisms.

34. **Assertion (A):** The compound $MgCl_2$, will not conduct electricity in solid-state.

Reason (R): Movement of ions in ionic compounds is not possible in solid-state.

35. Which among the following is necessary to carry out the blood coagulation in a cut or wound?

(a) White blood cells

(b) Blood plasma

(c) Platelets

(d) Red Blood cells

36. Which of the following are not ionic compounds?

(i) KCl (ii) HCl

(iii) CCl_4 (iv) NaCl

(a) (i) and (ii)

(b) (ii) and (iii)

(c) (iii) and (iv)

(d) (i) and (iii)

37. Which of the following is the correct arrangement of the given metals in correct 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

38. When white light enters a glass prism from air, the angle of deviation is least for

(a) blue light

(b) yellow light

(c) violet light

(d) red light

39. The splitting of white light into different colours on passing through a prism is called

(a) reflection

(b) refraction

(c) dispersion

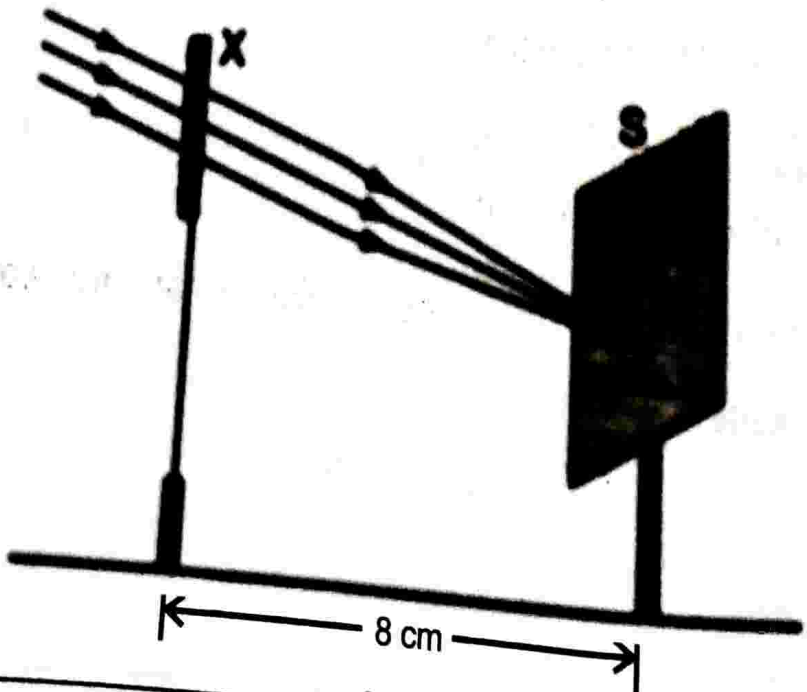
(d) deviation

40. The power of a lens is +5 D. Find the focal length of the lens
(a) Convex lens of 20cm
(b) Concave lens of 20cm
(c) Convex lens of 20m
(d) Concave lens of 20m

41. The convex lens has a focal length of 10cm.The object of height 2mm is placed at a distance of 5 cm from the pole. Find the height of the image.
(a) 4cm
(b) 6.67 mm
(c) 4 mm
(d) 3.33 mm

42. The refractive index of flint glass is 1.65 and that for alcohol is 1.36 with respect to air. What is the refractive index of the flint glass with respect to alcohol?
(a) 0.82
(b)1.21
(c)1.11
(d)1.01

43. A student used a device (X) to obtain/focus the image of a well illuminated distant building on a screen (S) as shown alongside in the diagram. Select the correct statement about the device (X).



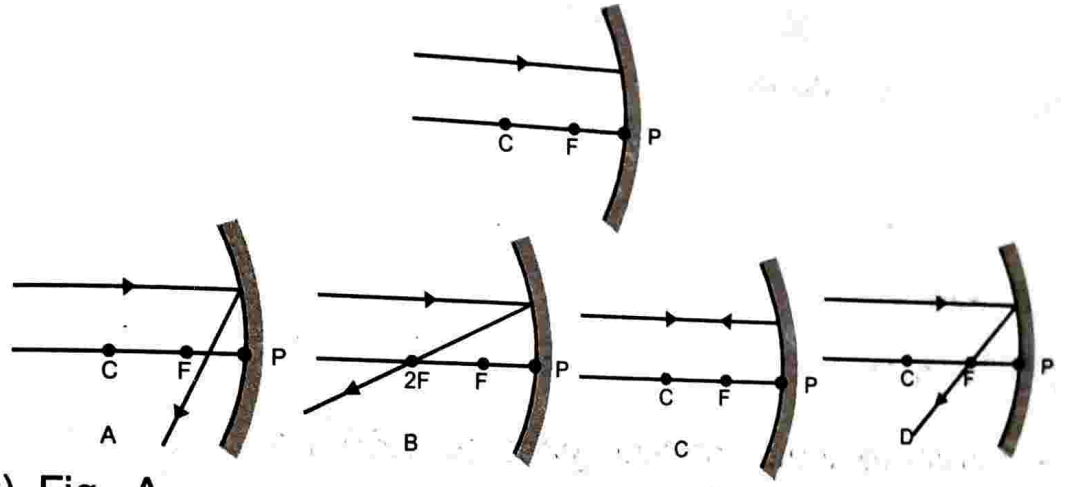
(a) This device is a concave lens of focal length 8 cm.

(b) This device is a convex mirror of focal length 8 cm.

(c) This device is a convex lens of focal length 4 cm.

(d) This device is a convex lens of focal length 8 cm.

44. Which of the following ray diagrams is correct for the ray of light incident on a concave mirror as shown in figure?



(a) Fig. A

(b) Fig. B

(c) Fig. C

(d) Fig. D

45. Refraction of light by the earth's atmosphere due to variation in air density is called

(a) atmospheric reflection

(b) atmospheric dispersion

(c) atmospheric scattering

(d) atmospheric refraction

46. Bleaching powder is used as a disinfectant for water to:

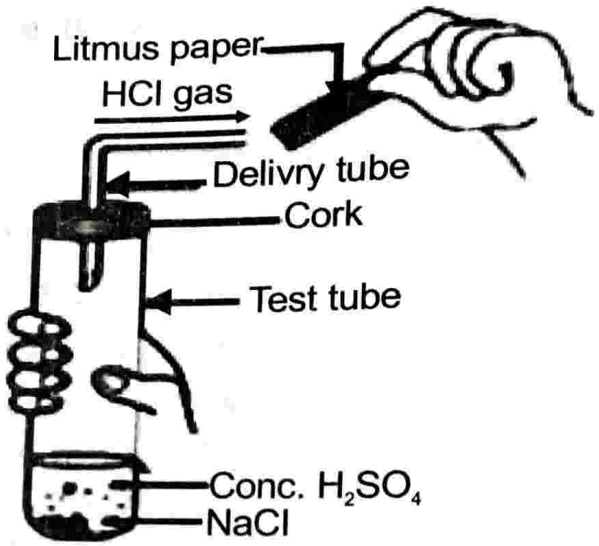
a. Make water tastier

b. Remove all the dirt from water

c. Make water germ-free

d. Make water clear

47. The figure given below represents the experiment carried out between conc. sulphuric acid and sodium chloride, which react with each other to form HCl gas.



Blue litmus paper is brought near the mouth of the delivery tube to check the presence of HCl acid but no change is observed in the colour of litmus paper because:

(a). The litmus paper used is dry

(b). The litmus paper used is moist

(c). Blue litmus paper does not change its colour with an acid

(d). The litmus paper is kept very close to the mouth of the delivery tube

48. 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

(iii) 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)

SECTION –C

Section-C consists of three cases followed by questions. There is a total of 12 questions in this section. ***Attempt any 10 questions*** from this section. The first attempted 10 questions would be evaluated.

CASE: TYNDALL EFFECT

In addition to being absorbed or transmitted, electromagnetic radiation can also be reflected or scattered by particles in the atmosphere. Scattering is the redirection of electromagnetic energy by suspended particles in the atmosphere. The Tyndall effect is light scattering by particles in a colloid or in a very fine suspension.

The type and amount of scattering that occurs depends on the size of the particles and the wavelength of the energy. Rayleigh scattering occurs when radiation (light) interacts with molecules and particles in the atmosphere that are smaller in diameter than the wavelength of the incoming radiation. Shorter wavelengths are more readily scattered that longer wavelengths.

49. Which of the following will not show Tyndall effect?

(a) Milk (b) Sugar solution

(c) Smoke (d) Emulsion

50. Tyndall effect is due to

(a) Refraction of light (b) Dispersion of light

(c) Absorption of light (d) Scattering of light

51. Which of the following natural phenomena are not due to the scattering of light in nature?

(I) Blue colour of sky

(II) Twinkling of stars

(III) Formation of rainbow

(IV) Colour of water in deep sea

(a) Both (I) and (II)

(b) Both (II) and (III)

(c) Both (II) and (IV)

(d) Both (III) and (IV)

52. The blue colour of the sky is because:

(a) Red colour is scattered more as compared to other colours.

(b) Red colour is absorbed more as compared to other colours.

(c) Blue colour is scattered more compared to other colours.

(d) Blue colour is absorbed more as compared to other colours.

CASE: **REACTIVITY OF METALS**

Analyze the following reactivity series given below and answer the questions that follow-

Potassium	K
Sodium	Na
Calcium	Ca
Magnesium	Mg
Aluminium	Al
Zinc	Zn
Iron	Fe
Tin	Sn
Lead	Pb
[Hydrogen]	[H]
Copper	Cu
silver	Ag
Gold	Au
Platinum	Pt

53. Which of the following pairs will give displacement reactions?

(a) $FeSO_4$ solution and Copper metal

(b) $AgNO_3$ solution and copper metal

(c) $CuSO_4$ solution and silver metal

(d) NaCl solution and copper metal

54. If copper is kept open in the air, it slowly loses its shining brown surface and gains a green coating. It is due to the formation of:

(a) Acidic $CuSO_4$

(b) Basic $CuCO_3$

(c) Acidic $Cu(NO3)_2$

(d) Basic CuO

55. Which one of the following four metals would be displaced from the solution of its salts by the other three metals?

(a) Mg

(b) Ag

(c) Zn

(d) Cu

56. Complete the following reaction:

$Zn + CuSO_4 \rightarrow$ ____x____ + ____y____

(a) x: ZnCu, y: SO_4

(b) No reaction take place

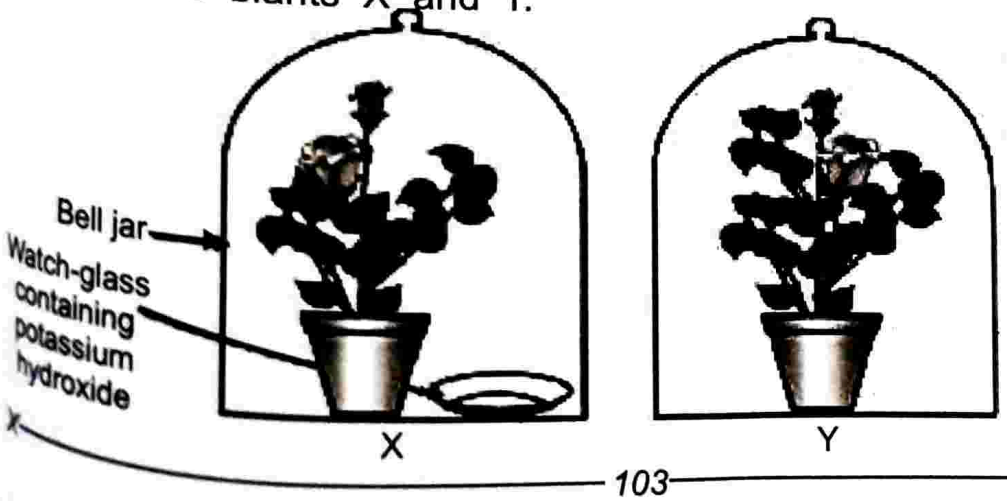
(c) x: $ZnSO_4$, y: Cu

(d) x: ZnS, y: CuO

CASE:

PHOTOSYNTHESIS

The Figure shown below represents an activity to prove the requirements for photosynthesis. During this activity, two healthy potted plants were kept in the dark for 72hours. After 72 hours, KOH is kept in the watch glass in setup X and not in setup Y. Both these setups are air tight and have been kept in light for 6 hours. Then, Iodine Test is performed with one leaf from each of the two plants X and Y.



57. This experimental setup is used to prove essentiality of which of the following requirements of photosynthesis?

(a) Chlorophyll

(b) Oxygen

(c) Carbon dioxide

(d) Sunlight

58. The function of KOH is to absorb

(a) Oxygen.

(b) Carbon dioxide.

(c) Moisture.

(d) Sunlight.

59. Which of the following statements shows the correct results of Iodine Test performed on the leaf from plant X and Y respectively?

(a) Blue-black color would be obtained on the leaf of plant X and no change in color on leaf of plant Y.

(b) Blue -black color would be obtained on the leaf of plant Y and no change in color on leaf of plant X.

(c) Red color would be obtained on the leaf of plant X and brown color on the leaf of plant Y.

(d) Red color would be obtained on the leaf of plant Y and brown color on the leaf of plant X.

60. Which of the following steps can be followed for making the apparatus air tight?

(i) placing the plants on glass plate

(ii) using a suction pump.

(iii) applying Vaseline to seal the bottom of jar.

(iv) creating vacuum

(a) i and ii

(b) ii and iii

(c) I and iii

(d) ii and iv

Questions in lieu of diagram based questions for VI candidates

SECTION A

3 A magnified real image is formed by a convex lens when the object is at

(a) F

(b) between F and 2 F

(c) 2F

(d) (a) and (b) both

23 The angle at which the ray gets deviated, the prism is under

(a) Angle of deviation

(b) Angle of dispersion

(c) Angle of emergence

(d) Angle of refraction

SECTION B

25 A gas is evolved when dilute sulphuric acid reacts with Zinc granules. It gives a pop sound when lit match stick is introduced near it. Identify the gas

(a) Nitrogen

(b) Hydrogen

(c) Oxygen

(d) carbon dioxide

29 Identify the option that indicates the correct enzyme that is secreted in location L, M and N. L, M and N represent Mouth cavity, stomach and small intestine of the human being.

	L	M	N
(a)	Lipase	Trypsin	Pepsin
(b)	Amylase	Pepsin	Trypsin
(c)	Trypsin	Amylase	Lipase
(d)	lipase	amylase	pepsin

43 A student used a device (X) to obtain/focus the image of a well illuminated distant building on a screen (S) which is placed 8cm away from the device (X) Select the correct statement about the device (X).

(a) This device is a concave lens of focal length 8 cm.

(b) This device is a convex mirror of focal length 8 cm.

(c) This device is a convex lens of focal length 4 cm.

(d) This device is a convex lens of focal length 8 cm.

44 If a virtual, erect and enlarged image is formed by a lens, then which of the following options are correct?

(a) It is a concave lens and the object is placed between pole and focus.

(b) It is a convex lens and the object is placed between focus and centre of curvature

(c) It is a convex lens and the object is placed between pole and focus

(d) It is a concave lens and the object is placed between focus and centre of curvature

47 An experiment is carried out between conc. sulphuric acid and sodium chloride, which react with each other to form HCl gas. When blue litmus paper is brought near the mouth of the delivery tube to check the presence of HCl acid, no change is observed in the colour of litmus paper because:

(a). The litmus paper used is dry

(b). The litmus paper used is moist

(c). Blue litmus paper does not change its colour with an acid

(d). The litmus paper is kept very close to the mouth of the delivery tube

SECTION C

Case

A student was performing an activity to prove the requirements for photosynthesis. During this activity, he kept two identical healthy potted plants A and Bin dark for 72 hours. After 72 hours, he covered plant A and B by bell shaped jars separately. While covering the plants with separate bell jars, he kept KOH in the watch glass by the side of the plant in setup A and not in setup B. Both these setups were made air tight and were kept in light for 6 hours. Then, Iodine Test was performed with one leaf from each of the two plants A and B.

57. This experimental setup is used to prove essentiality of which of the following requirements of photosynthesis?

(a) Chlorophyll

(b) Oxygen

(c) Carbon dioxide

(d) Sunlight

58. The function of KOH is to absorb

(a) Oxygen.

(b) Carbon dioxide.

(c) Moisture.

(d) Sunlight.

59. Which of the following statements shows the correct results of Iodine Test performed on the leaf from plant X and Y respectively?

(a) Blue-black color would be obtained on the leaf of plant X and no change in color on leaf of plant Y.

(b) Blue -black color would be obtained on the leaf of plant Y and no change in color on leaf of plant X.

(c) Red color would be obtained on the leaf of plant X and brown color on the leaf of plant Y.

(d) Red color would be obtained on the leaf of plant Y and brown color on the leaf of plant X.

60. Which of the following steps can be followed for making the apparatus air tight?

(i) placing the plants on glass plate

(ii) using a suction pump.

(iii) applying Vaseline to seal the bottom of jar.

(iv) creating vacuum

(a) i and ii

(b) ii and iii

(c) I and iii

(d) ii and iv

SAMPLE QUESTION PAPER-1 (TERM – I) 2021-22

CLASS X SCIENCE (086)

ANSWER KEY

SECTION-A

1.C
2.C
3.C
4.B
5.B
6.B
7.C
8.C
9.B
10.D
11.A
12.C
13.C
14.C
15.C
16.D

SECTION-B

25.D
26.C
27.C
28.D
29.A
30.A
31.B
32.D
33.C
34.A
35.C
36.C
37.C
38.A
39.B
40.B

SECTION-C

49.B
50.C
51.D
52.B
53.D
54.A
55.A
56.C
57.D
58.B
59.B
60.B

VI candidates

2. C
11. A
12. C

17.C

18.A

19.C

20.D

21.A

22.D

23.D

24.D

41.D

42.B

43.A

44.A

45.C

46.B

47.B

48.A

14. C

16. D

20. D

21. A

22. D

25. D

38. A

39. B

41. D

42. B

43. A

46. B

47. B

58. B

SAMPLE QUESTION PAPER-2 (TERM – I) 2021-22

CLASS X SCIENCE (086)

ANSWER KEY

1 B	2 C
3 B	4 C
5 D	6 A
7 B	8 B
9 B	10 B
11 B	12 A
13 D	14 B
15 B	16 C
17 A	18 B
19 A	20 A
21 A	22 B
23 A	24 C
25 C	26 A
27 C	28 C
29 D	30 C
31 A	32 C
33 A	34 C
35 D	36 C
37 A	38 D

39 C

40 D

41 B

42 B

43 B

44 A

45 B

46 C

47 D

48 B

49 A

50 B

51 C

52 A

53 B

54 B

55 B

56 C

57 A

58 C

59 C

60 C

SAMPLE QUESTION PAPER-3 (TERM–I)2021-22

CLASS X SCIENCE(086)

ANSWERS

Q.NO

SECTION-A

1. B. 2:1
2. D. A colourless and odourless hydrogen gas is evolved
3. A. Is less than one.
4. C. (ii) only
5. C. (i), (ii) and (iv)
6. C. Absorption of digested food
7. D. (iii) only
8. A. 80/120 mm of Hg
9. C. 1, 3 and 4
10. A. Virtual, Inverted and Magnified
11. B. At twice the focal length.
12. D. It burns with a pop sound
13. A. Right atrium → Right ventricle → Lungs → Left atrium → Left ventricle
14. D. $CuSO_4 + Zn \rightarrow ZnSO_4 + Cu$ —— Decomposition Reaction
15. A. Water ---- Oxygen ----- Chlorophyll.
16. (b) Flask 1 – clear Flask 2 — White/ cloudy

17. C. scattering of light

18. B. 2 X 10^8 m/s

19. A. y, p, z

20. A. concave lens.

21. A. Both concave

22. C. Conc.HCl : Conc.HNO3 :: 3 : 1

23. A. Enzyme Amylase Pepsin

24. C. Al

SECTION-B

25. D Washing soda

26. A. M = Zn Y = $FeSO_4$ Z = Fe

27. D. A

28. B. tartaric acid

29. D. They have thick elastic walls without valves inside, blood flows under high pressure and carry blood away from the heart to different parts of the body

30. A Nephron

31. C. A is true but R is false

32. C. A is true but R is false

33. A. Both A and R are true and R is the correct explanation of A.

34. A. Both A and R are true and R is the correct explanation of A.

35. B Liver

36. D. weak acid and strong base

37. A. A. with Refractive index 1.33

38. (b) $Ca(OH)_2 + Cl_2 \rightarrow CaOCl_2 + H_2O$

39. C. Atmospheric refraction.

40. B. Red colour, violet colour.

41. C. Iron

42. C. Cellular vacuoles

43. C. remove magnesium oxide formed over the surface of magnesium

44. B. The blue colour of the sky is due to scattering of light

45. B. 0.25 m

46. A. between F and O

47. C. Trypsin and Lipase

48. B. Pulmonary vein

SECTION-C

49. C. Prism

50. C. Refraction, dispersion and internal reflection

51. B. Behind the observer

52. B. White beam

53. B. Alveoli

54. C. R

55. A. Exchange of gases

56. C. Epiglottis

57. A. Al, Zn, Fe

58. A. Mg

59. D. $AgNO_3$ solution and Copper metal.

60. D. 3 and 4.

Marking Scheme in lieu of diagram based questions for VI candidates

SECTION-A

4. C. 7.0

7. D. No change will occur

10. B. 0°

16. C. Oxidation of carbon to carbon dioxide.

19. B. is scattered the least by smoke or fog

20. C. a parallel beam of light

23. A. Prevents mixing of oxygenated and deoxygenated blood

SECTION-B

26. D. Silver

40. C. Concave, plane and convex

41. D. Test tube D.

SECTION-C

53. A. Adenosine triphosphate

54. B. Chemical energy

55. A. Energy is released and stored in the form of ATP

SAMPLE QUESTION PAPER-4 (TERM – I) 2021-22

CLASS X

SCIENCE (086)

Q. NO Answer

SECTION A

1 B. They convert CO_2 and water into carbohydrates in the absence of sunlight

2. C. Dazzling white colour flame

3. B. Oxidizing agent

4. D. 1.0

5. A. Negative

6. C. (iii) and (vi)

7. B. Mesophyll

8. D. The foots of the pins are in straight line

9. D. $2H_2)g\_+O_2(g)\rightarrow 2H_2O)(g)$

10. A. Displacement reaction

11. B. magnesium hydroxide

12. C. A, C and D

13. C. F

14. B. Carbohydrates

15. C. Carbon dioxide

16. A. Iodine

17. C. Both A and B

18. D. (i), (iii), (iv), (ii)

19. C. At C

20. D. IV

21. D. Scattering of light

22. B. Anaerobic

23. B. Angle of deviation

24. C. Below 5.5

SECTION B

25. B. Rectum

26. A. Hydrogen gas and iron chloride are produced.

27. A. A

28. D. Nephrons

29. B. Copper

30. A. At infinity

31. A. Both A and R are true and R is the correct explanation of A

32. B. Both A and R are true and R is not the correct explanation of A

33. A. Both A and R are true and R is the correct explanation of A

34. A. Both A and R are true and R is the correct explanation of A

35. D. All of these

36. A. $6CO_2 + 12H_2O \xrightarrow{Chlorophyll+Sunlight} C_6H_{12}O_6 + +6O_2 + 6H_2O$

37. D. Longest wavelength

38. C. Peristaltic movement

39. B. Is directly proportional to the thickness of the glass slab.

40. C. Stomata surrounded by a pair of guard cells each

41. C. Barium chloride is mixed with sodium sulphate solution

42. C. Light is least scattered

43. A. (i) only

44. B. Calcium

45. C. Copper carbonate

46. A. Concave mirror

47. D. pH = 4.4

48. D. Double displacement reaction

SECTION C

49. C. 2:1

50. A. Graphite

51. B. Cathode

52. D. Electrolysis

53. A. Increases

54. A. Atmospheric refraction

55. C. Atmospheric refraction

56. C. Atmospheric refraction

57. C. Low pressure

58. A. Carries blood from an organ towards the heart

59. D. None of these

60. C. Pulmonary artery

Questions in lieu of diagram based questions for VI candidates

SECTION A

13 C. Small Intestine

14 B. Liver

18 D. Starch

20 D. Gets deviated and bends towards the thicker (base) part of the prism

SECTION B

27 A. It bends towards the normal

SECTION C

Case I

49. C. 2:1

50. A. Graphite

51. B. Cathode

52. D. Electrolysis

Case III

57. C. Low pressure

58. A. Carries blood from an organ towards the heart

59. D. None of these

60. C. Pulmonary artery

SAMPLE QUESTION PAPER-5 (TERM–I) 2021-22

ANSWER KEY

CLASS XSCIENCE(086)

Q.NO ANSWERS

SECTION-A

1. (c) Real, inverted, diminished and in blue shade
2. (d) S
3. (c) I, II and III
4. (c) 1.32
5. (c) Oxidation of carbon-to-carbon dioxide
6. (d) Nostrils → Pharynx → Larynx → Trachea → Alveoli
7. (a) Transport of water
8. (c) peristaltic movement
9. (d) (i) and (iv)
10. (c) Zinc
11. (d) Hg
12. (b) Lactic acid + Energy
13. (c) Sour and change blue litmus to red.
14. (b) (I), (II), & (III)
15. (b) Sodium zincate and hydrogen gas

16. (c) Baking soda

17. (c) rancidity

18. (a) Exothermic process

19. (c) Shedding of yellow leaves

20. (b) (II) and (III)

21. (b) refraction of light by different layers of varying refractive indices

22. (b) is scattered the least by smoke or fog.

23. (a) A and D

24. (a) Isaac Newton

SECTION-B

25. (b)Hydrogen

26. (b) brown flumes are produced

27. (d) Nephron

28. (b)Left ventricle pumps oxygenated blood to different body parts while right ventricle pumps deoxygenated blood to lungs

29. (b)(i)-amylase,(ii)-pepsin,(iii)-trypsin

30. (d) All of the above

31. (b)Both A and R are true and R is not the correct explanation of A

32. (b)Both A and R are true and R is not the correct explanation of A

33. (d)A is False but R is true

34. (a)Both A and R are true and R is the correct explanation of A

35. (c) Platelets

36. (b) (ii) and (iii)

37. (d) Sodium > Magnesium > Zinc > Iron

38. (d) red light

39. (c) dispersion

40. (a) Convex lens of 20cm

41. (c) 4 mm

42. (b) 1.21

43. (d) This device is a convex lens of focal length 8 cm.

44. (d) Fig. D

45. (d) atmospheric refraction

46. (c). Make water germ-free

47. (a). The litmus paper used is dry

48. (d) (ii) and (iv)

SECTION-C

49. (b) Sugar solution

50. (d) Scattering of light

51. (b) Both (II) and (III)

52. (c) Blue colour is scattered more compared to other colours.

53. (b) $AgNO_3$ solution and copper metal

54. (b) Basic $CuCO_3$

55. (b) Ag

56. (c) x: $ZnSO_4$, y: Cu

57. (c)Carbondioxide

58. (b)Carbon dioxide

59. (b)Blue -black colour would be obtained on the leaf of plant Y and no change in colour on leaf of plant X.

60. (c)i and iii

Marking Scheme in lieu of diagram based questions for VI candidates

SECTION-A

3 (b) between F and 2F

23 (a) Angle of deviation

SECTION-B

25 (b) Hydrogen

29 b

	L	M	N
	amylase	pepsin	trypsin

43 (d) The device is a convex lens of focal length 8cm

44. (c)It is a convex lens and the object is between pole and focus

47 (a) The litmus paper is dry

SECTION-C

57. (c)Carbondioxide

58. (b)Carbon dioxide

59. (b)Blue -black colour would be obtained on the leaf of plant Y and no change in colour on leaf of plant X.

60. (c)i and iii