

BLUEPRINT OF SCIENCE WEEKLY TEST

CLASS -X

S.No.	Type of question	No. of questions	marks	total
1	Very Short	2	1	2
2	SA-1	6	2	12
3	SA-2	5	3	15
4	VALUE BASED	1	3	3
5	LONG ANSWERED	2	5	10
6	MCQ	8	1	8
	TOTAL			50

CLASS: X SUBJECT: G. SCIENCE

(SET-1)

Time allowed : 3 hours
90

Pg. No.-07

Maximum Marks :

General Instructions :

- (i) The question paper comprises of **two Sections, A and B**. You are to attempt both the sections.
- (ii) **All** questions are **compulsory**.
- (iii) There is no overall choice. However, internal choice has been provided in all the five questions of five marks category. Only one option in such questions is to be attempted.
- (iv) **All** questions of **Section-A** and **all** questions of **Section-B** are to be attempted separately.
- (v) Question numbers **1 to 3** in **Section-A** are **one mark** questions. These are to be answered in **one word** or in **one sentence**.
- (vi) Question numbers **4 to 6** in **Sections-A** are **two marks** questions. These are to be answered in about **30 words** each.
- (vii) Question numbers **7 to 18** in **Section-A** are **three marks** questions. These are to be answered in about **50 words** each.
- (viii) Question numbers **19 to 24** in **Section-A** are **five marks** questions. These are to be answered in about **70 words** each.
- (ix) Question numbers **25 to 33** in **Section-B** are multiple choice questions based on practical skills. Each question is a **one mark** question. You are to select one most appropriate response out of the four provided to you.
- (x) Question numbers **34 to 36** in **Section-B** are based on practical skills. Each question is a **two marks** question.

SECTION-A

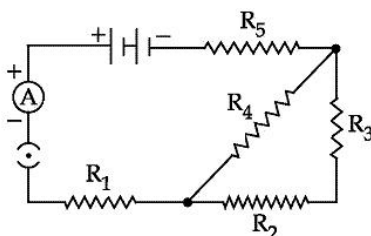
Q. 1 Define the term rancidity. (1)

Q. 2 What is meant by the statement that the potential difference between two points is 1 volt? (1)

Q. 3 What happens to a plant cell when we keep it in a hypotonic solution? (1)

Q. 4 The burning of a candle is accompanied by both physical and chemical changes. Mention the observations which help to deduce that both physical and chemical changes are taking place. (2)

Q. 5 Consider the following circuit diagram. If $R_1 = R_2 = R_3 = R_4 = R_5 = 3\Omega$, then find the equivalent resistance of the circuit. (2)



Q. 6 Identify the poles of the magnet in Figures (1) and (2). (2)

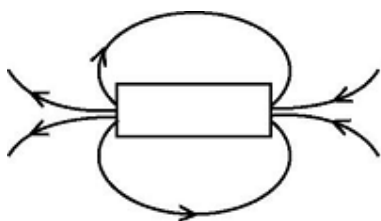


Figure - 1



Figure - 2

Q. 7 Give three differences between xylem and phloem. (3)

Q. 8

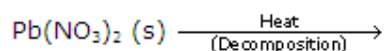
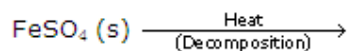
(3)

(a) What happens when copper is burned in air? Give the equation. What type of a reaction is it?

(b) What happens when hydrogen gas is passed over the product obtained in the step above? Also give the equation.

Q. 9 Complete the following reactions and write the balanced equations:

(3)



Q. 10

(3)

(i) Write the chemical name and formula of 'Plaster of Paris'.

(ii) How is it prepared?

(iii) Write the chemical equations of the reaction.

Q. 11 You are provided with three test tubes A, B and C which contain distilled water, acidic and basic solutions. If you are given blue litmus paper only, how will you identify the nature of the solutions in the three test tubes?

(3)

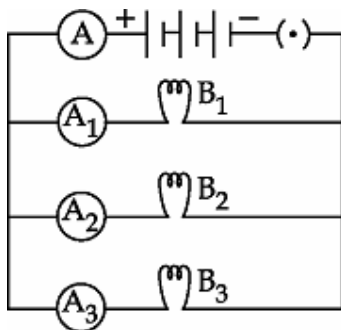
Q. 12 Give reasons:

(3)

- (i) Ionic compounds have high melting points.
- (ii) Ionic compounds are hard crystalline solids.
- (iii) Ionic compounds dissolve in water.

Q. 13 Study the circuit shown in which three identical bulbs B₁, B₂ and B₃ are connected in parallel with a battery of 4.5 V.

(3)



- (i) What will happen to the glow of the other two bulbs if the bulb B₃ gets fused?
- (ii) If the wattage of each bulb is 1.5 W, what reading will the ammeter A show when all the three bulbs glow simultaneously?
- (iii) Find the total resistance of the circuit.

Q. 14 Dams are constructed to generate electricity from water stored at a height. People living in the neighbouring areas protested against it to save the flora and fauna.

(3)

- (i) What type of energy is possessed by the stored water?
- (ii) What is the energy transformation which takes place in a hydroelectric power plant?
- (iii) What values of the people are shown by this act? (Any two)

Q. 15 Name the physical quantity which is (i) the same (ii) and different in all the bulbs when three bulbs of

(3)

- (a) The same wattage are connected in series
- (b) The same wattage are connected in parallel
- (c) Different wattage are connected in series
- (d) Different wattage are connected in parallel

Q. 16 How will the magnetic field produced at a point due to a current-carrying circular coil change,

if we

(3)

- (a) Increase the current flowing through the coil?
- (b) Reverse the direction of the current through the coil?
- (c) Increase the number of turns in the coil?

Q. 17 Give reasons for the following:

(3)

- (a) The glottis is guarded by the epiglottis.
- (b) The lungs alveoli are covered with blood capillaries.
- (c) The wall of the trachea is supported by cartilaginous rings.

Q. 18

(3)

- (a) The components of an electric circuit are a 0.5-m-long nichrome wire XY, an ammeter, a voltmeter, four cells of 1.5 V each, a rheostat and a plug key. Draw a diagram of the circuit to study the relation between the potential difference across the terminals X and Y of the wire and the current flowing through it.
- (b) State the law which relates the potential difference across a conductor with the current flowing through it.

Q. 19

(5)

- (a) Write the chemical name and formula of washing soda. How is it prepared? Write the chemical equation of the reaction.
- (b) Why does distilled water not conduct electricity, whereas rain water does?

Q. 20 A metal E is stored under kerosene. When a small piece of it is left open in the air, it catches fire. When the product formed is dissolved in water, it turns red litmus to blue.

(5)

- (i) Name the metal E.
- (ii) Write the chemical equation for the reaction when it is exposed to air and when the product is dissolved in water.
- (iii) Explain the process by which the metal is obtained from its molten chloride.

Q. 21 What is a solenoid? Draw the patterns of magnetic field lines of a solenoid through which a steady current flows? What does the pattern of field lines inside the solenoid indicate? Write a use of it. (5)

Q. 22

(5)

- (a) State the rule to determine the direction of
 - (i) Magnetic field produced around a straight conductor carrying current.
 - (ii) Force experienced by a current-carrying straight conductor placed in a magnetic field which is perpendicular to it.
 - (iii) Current induced in a coil due to its rotation in a magnetic field.
- (b) Name two safety measures commonly used in domestic electric circuits and appliances.

Q. 23

(5)

(a) Draw a diagram of the human alimentary canal and label the following:

(i) Part in which starch digestion starts.

(ii) Part in which bile is stored.

(iii) Part in which nutrients are absorbed.

(iv) Part in which water is absorbed.

(b) Mention the role of hydrochloric acid in the stomach.

(c) What function is served by the following?

(i) Gastric sphincter

(ii) Anal sphincter

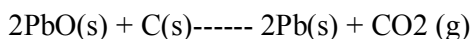
Q. 24

(5)

(a) Write the three main steps which take place in chloroplasts during photosynthesis.

(b) How does stomata open and close?

(c) Which raw material is made available to plants for photosynthesis when stomata are open?

SECTION B**Q. 25** Which of the statements about the reaction below are incorrect? (1)

(i) Lead is getting reduced.

(ii) Carbon dioxide is getting oxidised.

(iii) Carbon is getting oxidised.

(iv) Lead oxide is getting reduced.

A. (i) and (ii)

B. (i) and (iii)

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

D. All

Q. 26 The colour of the pH paper strip turned red when it was dipped into a sample. The sample could

be

(1)

A. Dilute sodium bicarbonate

B. Tap water

C. Dilute sodium hydroxide

D. Dilute hydrochloric acid

Q. 27 Which one of the following cannot be used to find the pH of a solution?

(1)

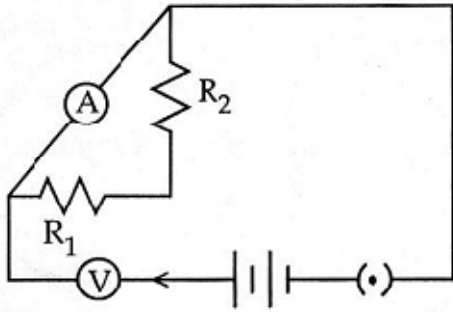
A. pH paper

B. Litmus paper

C. Universal indicator

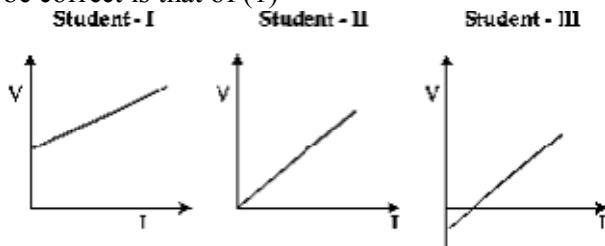
D. Standard pH value chart

Q. 28 For carrying out the experiment on finding the equivalent resistance of two resistors connected in series, a student sets up the circuit as shown. On further verification, he finds out that the circuit has one or more of the following faults: (1)



- (i) The resistors R_1 and R_2 have not been correctly connected in series.
 - (ii) The voltmeter has not been correctly connected in the circuit.
 - (iii) The ammeter has not been correctly connected in the circuit.
- Of these three, the actual fault in the circuit is/are
- A. Both (i) and (ii)
 - B. Both (ii) and (iii)
 - C. Only (i)
 - D. Only (ii)

Q. 29 In the experiment on studying the dependence of current I on the potential difference V , three students plotted the following graphs between V and I . The graph which is likely to be correct is that of (1)



- A. Student I only
- B. Student II only
- C. Student III only
- D. All the three students

Q. 30 For the circuits shown in Figures 1 and 2, the ammeter reading would be (1)

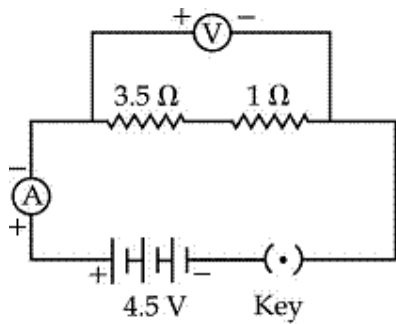


Fig. 1

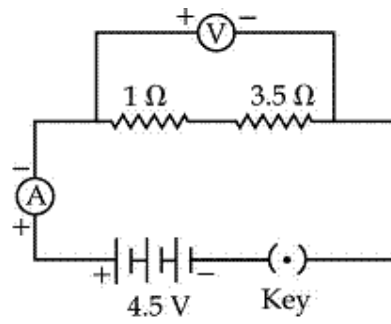
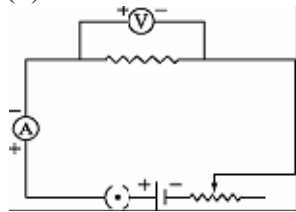


Fig. 2

- A. 1.0 A in Figure 1 and 0.0 A in Figure 2
- B. 0.0 A in both
- C. 1.0 A in both
- D. 1.0 A in Figure 1 and 1.0 A in Figure 2

Q. 31 The two circuit components shown connected in parallel in the following circuit are (1)

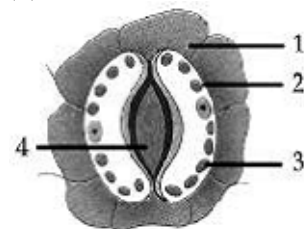


- A. Rheostat and voltmeter
- B. Voltmeter and resistor
- C. Voltmeter and ammeter
- D. Ammeter and resistor

Q. 32 Of the following, which one is needed to demonstrate that 'Light is essential for photosynthesis'? (1)

- A. A Hydrilla twig kept inside a beaker containing water
- B. A variegated leaf
- C. A healthy destarched potted plant
- D. A germinating plant

Q. 33 The following diagram shows the stomatal apparatus as observed in a mounted slide. Its parts have been labelled with numbers. Which number denotes chloroplast? (1)



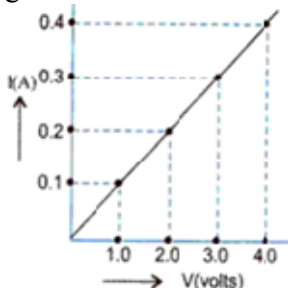
A. 1

B. 2

C. 3

D. 4

Q. 34 What would a well-stained leaf peel preparation when focused under a high power of the microscope show? (2) **Q. 35** What happens when iron nails are kept in an aqueous solution of CuSO_4 and why? (2) **Q. 36** In the experiment to study the dependence of current on potential difference across a resistor, a student obtained the graph as shown in the diagram.



(i) What is the value of the resistance of the resistor?

Class X Science Term 1 answer key (set-1)

SECTION A

1. Ans. The condition produced due to oxidation of fats and oils present in foods by virtue of which foods develop unpleasant smell and taste is called rancidity.

2. Ans. Potential difference of 1 volt means that one joule of work is done to move a charge of one coulomb from one point to another.

3. Ans. When we keep plant cells in a hypotonic solution, they absorb water from the surroundings and become more turgid.

4. Ans. In a physical change, there is only change of state of substance and no new substance is formed. Thus, melting of wax is a physical change because solid wax changes to liquid wax and no new substance is formed.

In a chemical change, a new substance is formed. Thus, the burning of wax is a chemical change because wax (made of hydrocarbons) burns to produce carbon dioxide and water vapour, i.e. new products are formed.

5. Ans. Let the resistance of the combination of R_2 , R_3 and R_4 be x , then
Hence, the equivalent resistance of the circuit $=R=8\Omega$

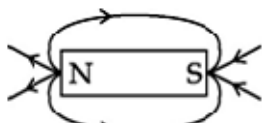


Fig. (1)

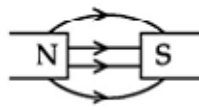


Fig. (2)

7

Xylem

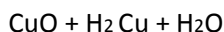
- (i) It helps in the transportation of food.
- (ii) It shows bidirectional movement.
- (iii) It requires energy in the form of ATP for movement of substances.

Phloem

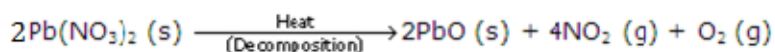
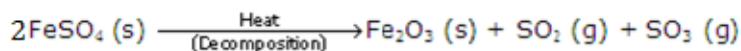
- (i) It helps in the transportation of water and minerals.
- (ii) It shows unidirectional movement.
- (iii) It uses diffusion for movement of substances.

8Ans.

- (a) When copper metal is heated in air, it gets oxidised to form copper oxide.
 $2\text{Cu} + \text{O}_2 \rightarrow 2\text{CuO}$ It is an oxidation reaction because copper is oxidised to copper oxide.
- (b) When hydrogen gas is passed over heated copper oxide, black copper oxide is reduced and brown copper metal is obtained.



9



10

The chemical name of 'Plaster of Paris' is calcium sulphate hemihydrate.

- (ii) It is prepared by heating gypsum to a temperature of 100°C (373 K) in a kiln

11

Ans.

- (i) Solution A: Test the solution with blue litmus paper. There will be no change in the colour of blue litmus paper.
 - (ii) Solution B: Test the solution with blue litmus paper. The colour of blue litmus paper will change to red.
 - (iii) Solution C: Test the solution with a piece of red litmus paper (formed in step ii). The colour of red litmus paper will change back to blue.
- Again test solution A with a piece of red litmus paper, there will be no change in colour. Hence, solution A (distilled water) is neutral because it does not bring out any change in

the colour of litmus paper. Solution B is acidic because it turns blue litmus paper red. Solution C is basic because it turns red litmus paper blue.

12. Ans.

- (i) Ionic compounds have high melting points because there is a strong electrostatic force of attraction between the oppositely charged ions of ionic compounds. Hence, a large amount of energy is required to break this strong bonding force between ions.
- (ii) Ionic compounds are very hard solids due to the strong force of attraction

Ionic compounds are very hard solids due to the strong force of attraction between the oppositely charged + ve and -ve ions.

(iii) Ionic compounds dissolve in water because water has a high dielectric constant due to which it weakens the attraction between the ions.

13. Ans.

- (i) If the bulb B₃ gets fused, then the other two bulbs will continue glowing with the same brightness.
- (ii) When the bulbs are in parallel, wattage will be added (4.5 W) and the ammeter reading would be $45/45 = 1.0$ ampere.
- (iii) Because the ammeter reading is 1.0 ampere, the resistance of the combination is 4.5 ohm

Ans. 14

- (i) Potential energy
- (ii) Potential energy (of stored water) into electrical energy
- (iii) (a) People are sensitive to the environment.
- (b) They have compassion for animals and are proactive and responsible.

15. Ans.

- (a) Same wattage is connected in series:
 - 1. Current and voltage are same.
 - 2. Nothing is different.
- (b) Same wattage is connected in parallel:
 - 1. Current and voltage are same.
 - 2. Nothing is different.
- (c) Different wattage is connected in series:
 - 1. Current is same.
 - 2. Voltage is different.
- (d) Different wattage is connected in parallel:
 - 1. Voltage is same.
 - 2. Current is different.

16. Ans.

- (a) On increasing the current flowing through the coil, the field will increase.
- (b) On reversing the direction of current through the coil, the direction of the field will reverse.
- (c) On increasing the number of turns in the coil, the field will increase.

17. Ans.

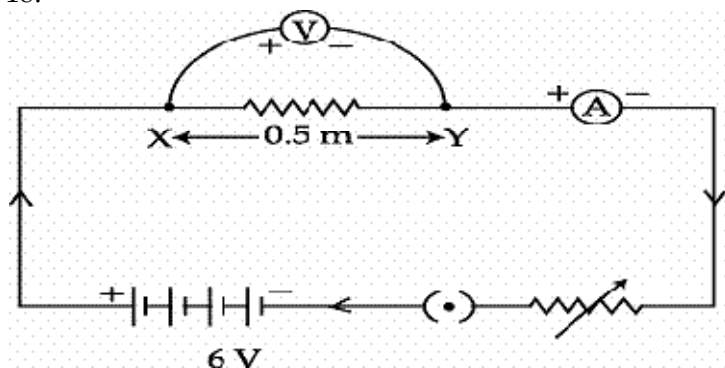
(a) The glottis is covered by a small cartilaginous flap of skin called the epiglottis which

prevents the entry of food particles into the wind pipe while swallowing.

(b) The lung alveoli are richly supplied with blood capillaries for the exchange of gases. From the thin walls of alveoli, oxygen diffuses into blood and is supplied to the tissues, while carbon dioxide is absorbed by blood from the tissues and is carried to the alveoli of the lungs for exhalation.

(c) The walls of the trachea are supported by C-shaped cartilage rings which allow the trachea to collapse in the presence of less air in it.

18.



(b) Ohm's law: The potential difference V across the ends of a given metallic wire in an electric circuit is directly proportional to the current flowing through it provided its temperature remains the same.

19. Ans.

(a) The chemical name of washing soda is sodium carbonate decahydrate.

Its formula is $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$. It is obtained by heating baking soda and then recrystallisation.

(b) Distilled water is a pure form of water and is devoid of any ionic species. Therefore, it does not conduct electricity. Rain water, being an impure form of water, contains many ionic species such as acids, and therefore, it conducts electricity

Ans. 20

(i) Metal-sodium

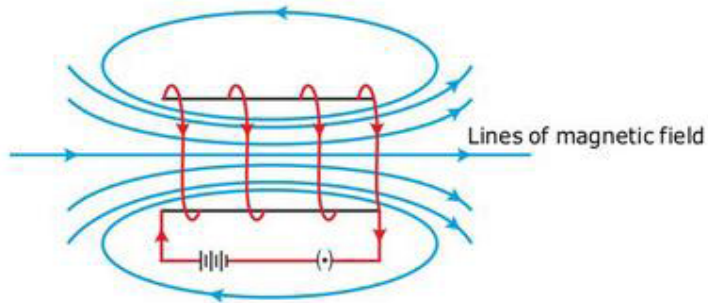
(ii)

(iii) Electrolysis of molten sodium chloride (NaCl) is the process.

i.e. we can write:

Ans.21

A coil of many circular turns of insulated copper wire wrapped closely in the shape of a cylinder is called a solenoid.



The field lines inside the solenoid are in the form of parallel straight lines. This indicates that the magnetic field is the same at all the points inside the solenoid. **USE:** A strong magnetic field produced inside a solenoid can be used to magnetise a piece of magnetic material, such as soft iron, when placed inside the coil.

22. Ans.

(a) (i) Right-hand thumb rule: Imagine that you are holding a current-carrying straight conductor in your right hand such that the thumb points towards the direction of the current, then your fingers will wrap around the conductor in the direction of the field lines of the magnetic field.

(ii) Fleming's left-hand rule: Stretch the thumb, forefinger and middle finger of your

hand such that they are mutually perpendicular. If the first finger points in the direction of the magnetic field and the second finger in the direction of the current, then the thumb will point in the direction of motion or the force acting on the conductor. (iii)

Fleming's right-hand rule: Stretch the thumb, forefinger and middle finger of your right hand so that they are perpendicular to each other. If the forefinger indicates the direction of the magnetic field and the thumb shows the direction of motion of the conductor, then the middle finger will show the direction of induced current. (b) Two

safety measures commonly used in domestic electric circuits and appliances are

(i) Provision of electric fuse

(ii) Earthing of metal bodies of electrical appliances

Ans. 23

(a) Diagram of the human alimentary canal:

(i) Part in which starch digestion starts: Mouth

(ii) Part in which bile is stored: Gall bladder

(iii) Part in which nutrients are absorbed: Small intestine

(iv) Part in which water is absorbed: Large intestine

- (b) Role of hydrochloric acid in the stomach: It kills bacteria in the stomach and also provides an acidic medium for the action of pepsin. (c)
- (i) Gastric sphincter: It controls the release of food from the stomach to the small intestine.
 - (ii) Anal sphincter: It controls the release of undigested waste from the rectum through the anus.

24. Ans.

- (a) The steps which take place in chloroplasts during photosynthesis are
- (i) Absorption of sunlight energy by chlorophyll.
 - (ii) Conversion of light energy into chemical energy and the splitting of water into hydrogen and oxygen by light energy.
 - (iii) Reduction of carbon dioxide by hydrogen to form carbohydrate (glucose) by

utilising chemical energy.

- (b) The opening and closing of stomata is controlled by guard cells. When water flows into the guard cells, they swell, become curved and cause the stomata to open. When the guard cells lose water, they shrink, become straight and close the stomata.
- (c) Carbon dioxide is made available to plants when stomata are open.

SECTION B

25. Ans. A (i) and (ii)

26. Ans. D. Dilute hydrochloric acid

27. Ans. B. Litmus paper

28. Ans. B. Both (ii) and (iii). The positions of the voltmeter and ammeter should be exchanged.

29. Ans. B. Student II only. Because $V \propto I$ when V is zero, I is zero. So, student II's graph is correct.

30. Ans. C. 1.0 A in both circuits. In both the circuits, equivalent resistance is 4.5 ohm.

31. Ans. B. The voltmeter and the resistor are connected in parallel.

32. Ans. C. A healthy destarched potted plant.

33. Ans. C. 3 represents chloroplast which is located in guard cells represented by 2. While 4 is stomatal pore and 1 is epidermis.

34. Ans. A well-stained leaf peel preparation would show epidermal cells, stomata and guard cells, each with one nucleus and many chloroplasts.

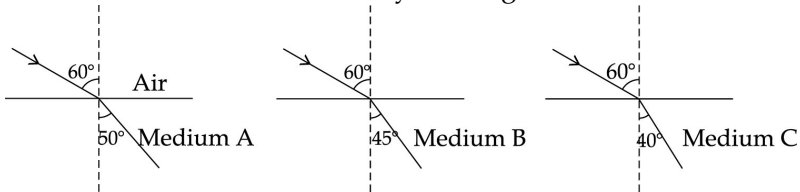
35. Ans. Iron displaces copper from copper sulphate. Hence, a reddish brown Cu deposit can be observed on iron nails when these are kept in an aqueous solution of CuSO_4 .

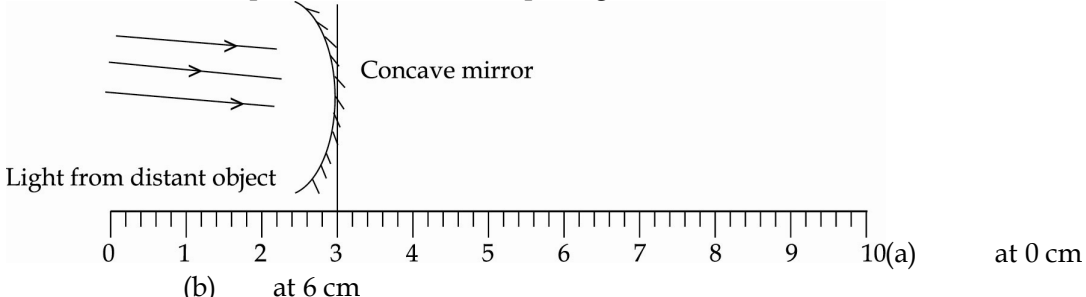
36. Ans.

(i) Slope of the I-V graph gives the reciprocal of the resistance.

			SET-1
SUMMATIVE ASSESSMENT - II			
SCIENCE			
Class - X			
Time allowed : 3 hours		Maximum Marks : 90	
General Instructions :			
(i)	The question paper comprises of two Sections, A and B . You are to attempt both the sections.		
(ii)	All questions are compulsory .		
(iii)	There is no choice in any of the questions.		
(iv)	All questions of Section-A and all questions of Section-B are to be attempted separately.		
(v)	Question numbers 1 to 3 in Section-A are one mark questions. These are to be answered in one word or in one sentence .		
(vi)	Question numbers 4 to 6 in Section-A are two marks questions. These are to be answered in about 30 words each.		
(vii)	Question numbers 7 to 18 in Section-A are three marks questions. These are to be answered in about 50 words each.		
(viii)	Question numbers 19 to 24 in Section-A are five marks questions. These are to be answered in about 70 words each.		
(ix)	Question numbers 25 to 33 in Section-B are multiple choice questions based on practical skills. Each question is a one mark question. You are to select one most appropriate response out of the four provided to you.		
(x)	Question numbers 34 to 36 in Section-B are questions based on practical skills. Each question is a two mark question.		
SECTION-A			
1	Br and Cl fall in group no. 17 of periodic table Compare the atomic size of Br and Cl on the basis of this information.		1
2	Where does the implantation of embryo take place in human female reproductive system ?		1
3	Mention the name given to various steps of a food chain.		1
4	A person is not able to see distinctly the objects placed beyond 90 cm from him. Giving reason identify the defect in his eye. Determine the nature, of lens used to correct the defect.		2
5	Suggest any two methods as an individual to reduce the consumption of fossil fuels.		2

6	It is said that, there is a need to put a complete ban on the products containing aerosols. What are aerosols ? Why is there a demand to put a ban on them ?	2												
7	Give an example of each of the following compounds having the following functional group. Write also the names of the examples. Aldehyde, Ketone and Carboxylic acid.	3												
8	Identify the elements to complete the table : <table border="1" data-bbox="381 489 1300 632"> <thead> <tr> <th>Period</th> <th>Group</th> <th>Element</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>18</td> <td></td> </tr> <tr> <td>2</td> <td>17</td> <td></td> </tr> <tr> <td>2</td> <td>16</td> <td></td> </tr> </tbody> </table>	Period	Group	Element	1	18		2	17		2	16		3
Period	Group	Element												
1	18													
2	17													
2	16													
9	What is the IUPAC name of acetic acid Why is it a weak acid ? What is vinegar ? List one of its use.	3												
10	Complete the following table : <table border="1" data-bbox="381 768 1300 911"> <thead> <tr> <th>Element</th> <th>Group</th> <th>Period</th> </tr> </thead> <tbody> <tr> <td>Mg</td> <td></td> <td></td> </tr> <tr> <td>C</td> <td></td> <td></td> </tr> <tr> <td>F</td> <td></td> <td></td> </tr> </tbody> </table>	Element	Group	Period	Mg			C			F			3
Element	Group	Period												
Mg														
C														
F														
11	Evolutionary relationship can be traced by study of homologous organs. Explain.	3												
12	Diagrammatically represent the process of germination and label the following parts. (a) Part responsible for production of male germ-cells (b) Part which encloses the female germ-cell inside and later on forms the fruit.	3												
13	Explain with the help of a figure that father is responsible for the sex of a child.	3												
14	The process of fragmentation is not true for all multicellular organisms. Give three reasons in support of this statement.	3												
15	Define the term 'evolution'. "Evolution can not be equated with progress". Justify it.	3												
16	(i) Write the range of distance for a person having normal vision. (ii) A person needs to use glasses for reading newspaper. Identify the defect in her vision and the type of lens she would need to correct it. (iii) Sometimes when we enter into a dark room from bright sunlight we are unable to see objects clearly. Why ?	3												
17	(a) Define Centre of Curvature. (b) Show the position of centre of curvature of concave and convex mirror on a diagram. Draw normal at a point on the surface of any one. What will be the angle of incidence of a ray of light passing through centre of curvature of a concave mirror ?	3												
18	A conservation week is going to be celebrated in your school. You have decided to pledge for conservation of resources. (a) Write any three areas in which you can give your contribution for conservation of resources. (b) State any three values that are inculcated with this approach.	3												

19	<p>Explain the following terms with the help of chemical reactions :</p> <p>(i) Oxidation reaction (ii) Hydrogenation reaction (iii) Substitution reaction (iv) Esterification reaction (v) Saponification reaction</p>	5
20	<p>(a) Explain whether traits like eye colour or height is genetically inherited. Do power to lift weights and reading french also belong to the same category ?</p> <p>(b) How do variations affect the evolution of those organisms that reproduce sexually ?</p>	5
21	<p>Different organisms reproduce by different methods suitable to their body designs.</p> <p>(a) Justify the above statement using examples of three different organisms which reproduce by different methods of asexual reproduction.</p> <p>(b) Differentiate between sexual and asexual modes of reproduction.</p>	5
22	<p>(a) Demonstrate an activity with a well labelled diagram to prove that white light is made up of seven colours.</p> <p>(b) Which colour of light bends least and which one the most while passing out from the prism. Also state the reason for the same.</p>	5
23	<p>(a) Define absolute refractive index.</p> <p>(b) The path of a light ray from three different media A, B and C for a given angle of incidence is shown below. Study the diagrams and answer the following questions.</p>  <p>(i) Which of the three media A, B or C has maximum optical density ?</p> <p>(ii) Through which of the three media, will the speed of light be maximum ?</p> <p>(iii) Will the light travelling from A to B bend towards or away from the normal ?</p> <p>(iv) Will the refractive index of B relative to C be more than or less than ?</p>	5
24	<p>(a) Write relation between u, v, f for lenses and for mirrors where u, v, f are object distance, image distance and focal length respectively.</p> <p>(b) The magnification produced by a concave mirror is $m = +4$. Write the information about the image given by this statement.</p> <p>(c) Draw a ray diagram for the following and show the formation of the images in case of concave mirror when the object is placed :</p> <p>(i) Between the pole and focus point</p> <p>(ii) at the centre of curvature</p>	5
SECTION - B		
25	<p>The relevance of adding sodium chloride to separate soap from the solution is :</p> <p>(a) It increases solubility of soap.</p> <p>(b) It decreases density of soap.</p>	1

	(c) It decreases solubility of soap. (d) It increases density of soap.	
26	Saponification reaction is : (a) Alkaline decomposition of fats. (b) Alkaline hydrolysis of fats. (c) Acidic decomposition of fats. (d) Acidic hydrolysis of fats.	1
27	While washing clothes in hard water, (a) a small amount of soap is used. (b) soap forms lather. (c) soap forms a solid mass called scum. (d) soap gives a clear solution.	1
28	While performing an experiment to determine the focal length of a convex lens, a student obtains a sharp inverted image of the laboratory window grill on the screen and measures the distance 'd' between the screen and the lens. She then repeats the experiment and takes a distant tree as the object in the second case. In order to get a sharp image on the screen, she will now need to move the screen. (a) slightly nearer to the lens. (b) slightly farther away from the lens. (c) very close to the lens. (d) very far away from the lens.	1
29	In the following setup, the focal length of the concave mirror is 3 cm. The mark on the scale on which the screen be placed to obtain a sharp image would be :  (a) at 0 cm (b) at 6 cm (c) at 8 cm (d) at 1 cm.	1
30	The lateral displacement of an incident ray passing through of a rectangular glass slab for a given angle of incidence is : (a) directly proportional to the thickness of glass slab (b) inversely proportional to the thickness of glass slab (c) directly proportional to product of length and thickness of glass slab (d) independent of the thickness of glass slab	1
31	While doing the experiment of tracing the path of ray of light through a triangular glass prism a student takes precautions : (A) position of prism should be fixed while doing experiment. (B) angle of incidence should not be less than 30°. (C) two pins taken as object should be placed on incident ray at proper distance from each other.	1

	(D) locate the position of image keeping both eyes open. One of the precautions is not appropriate. It is : (a) (A) (b) (B) (c) (C) (d) (D)	
32	The most commonly used pair in the animal kingdom to observe analogy is : (a) forearms of man, wings of bird (b) wings of insect, wings of bird (c) flipper of seal, wings of birds (d) forelimbs of horse, flippers of seal	1
33	The union of a male gamete with ovum to form a seed is called as : (a) germination (b) pollination (c) fertilization (d) reproduction	1
34	Fill in the blanks with appropriate words. (a) Acetic acid turns _____ litmus solution or paper into _____. (b) Acetic acid is miscible in _____ in all proportions and form _____ solutions.	2
35	Write two precautions while viewing a permanent slide of budding in Yeast cell.	2
36	Focal length of a convex lens is 20 cm. An object is kept at a distance of 10 cm from it. Find the position of the image after refraction through it. Draw a ray diagram to explain the image formation.	2
	-o0o0o0o-	

SET-1

Marking Scheme

SUMMATIVE ASSESSMENT – II

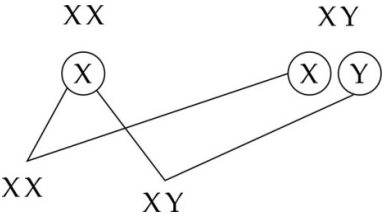
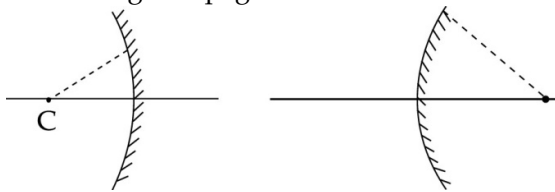
Science (Class–X)

General Instructions:

- 1 The Marking Scheme provides general guidelines to reduce subjectivity and maintain uniformity. The answers given in the marking scheme are the best suggested answers.
- 2 Marking be done as per the instructions provided in the marking scheme. (It should not be done according to one's own interpretation or any other consideration).
- 3 Alternative methods be accepted. Proportional marks be awarded.
- 4 If a question is attempted twice and the candidate has not crossed any answer, only first attempt be evaluated and 'EXTRA' be written with second attempt.
- 5 In case where no answers are given or answers are found wrong in this Marking Scheme, correct answers may be found and used for valuation purpose.

SECTION-A

1	Atom of Br is bigger than atom of Cl.	1
2	Uterus	1
3	Trophic level	1
4	Myopia because his far point has shifted from infinity to 90 cm Concave lens	2
5	<ul style="list-style-type: none"> • Taking bus, walking, cycling to travel • saving electricity by using stairs, bulbs of low power 	2
6	Aerosols are Chloro Fluro Carbons. Ozone layer which shields the earth from UV radiations is getting damaged and is a matter of concern. Depletion causes skin cancer.	2
7	Aldehyde - CH_3CHO - Ethanal Ketone - CH_3COCH_3 - Propanone Carboxylic acid CH_3COOH - Ethanoic acid	3
8	(a) Helium (b) Chlorine (c) Sulphur	3
9	Ethanoic acid Weak acid as does not completely ionised 5-8% solution of acetic acid in water - vinegar Used as preservative in pickles	3
10	Mg : 2, 3 C : 14, 2 F ; 17, 2	3
11	It shows that they have developed modifications to perform different functions.	3

12	<ul style="list-style-type: none"> - Diagram - a) Pollen grain (Identify + label) - b) Ovary (Identify + label) 	3
13		3
14	<ul style="list-style-type: none"> - All multi-cellular organisms cannot simply divide cell-by-cell - As they are not a random collection of cells. - Specialized cells form tissue and then organs placed at definite positions. - Need more complex ways of division. 	3
15	<p>Correct definition Correct Justification</p>	3
16	<ul style="list-style-type: none"> (i) 25 cm to infinity (ii) hypermetropia, convex lens (iii) It is because that the iris takes sometime to expand the pupil to allow more light to enter. Similarly, when we enter into bright light iris takes some time to contract the pupil. 	3
17	<ul style="list-style-type: none"> (a) The centre of the hollow sphere of which the reflecting surface of a spherical mirror forms a part is called centre of curvature. (b) <ul style="list-style-type: none"> • NCERT Fig 10.3 page 164  <ul style="list-style-type: none"> • Drawing normal (Line through(C)) • Zero 	3
18	<ul style="list-style-type: none"> (a) Optimum use of resources, grow more trees, car pooling, use of public transport, creating awareness amongst public, reusing the material. (any three) (b) To protect and improve the natural environment, social awareness, environmental conservation, eco-friendly approach, value for life. (any three) 	3

19	<p>Any suitable example</p> <p>(i) $\text{CH}_3\text{CH}_2\text{OH} \xrightarrow{\text{pot permanganate} + \text{acid}} \text{CH}_3\text{COOH}$</p> <p>(ii) $\text{CH}_2 = \text{CH}_2 + \text{H}_2 \xrightarrow{\text{Ni}} \text{CH}_3 - \text{CH}_3$</p> <p>(iii) $\text{CH}_4 + \text{Cl}_2 \rightarrow \text{CH}_3\text{Cl} + \text{HCl}$</p> <p>(iv) $\text{CH}_3\text{COOH} + \text{CH}_3\text{CH}_2\text{OH} \xrightarrow{\text{acid}} \text{CH}_3\text{COOCH}_2\text{CH}_3 + \text{H}_2\text{O}$</p> <p>(v) $\text{CH}_3\text{COOCH}_2\text{CH}_3 \xrightarrow[\text{acid}]{\text{NaOH}} \text{CH}_3\text{COOH} + \text{CH}_3\text{CH}_2\text{OH}$</p>	5
20	<p>(a) Yes, eye colour and height are genetically inherited traits, as these are expressed by genes. No, weight lifting and reading French are acquired traits.</p> <p>(b) Variations in individuals during sexual reproduction gives survival advantages to them, and help them to adapt even in extreme environments.</p>	5
21	<p>(a) <i>Amoeba</i> - Binary fission <i>Plasmodium</i> - Multiple fission <i>Hydra</i> - Budding <i>Planaria</i> - Regeneration (any 3 + Explain)</p> <p>(b) Sexual - two parents ; Asexual - single parent</p>	5
22	<p>(a) Activity 11.2 NCERT Book page 193 Description Fig 11.5 NCERT Page 193 Fig.</p> <p>(b) Red color bends the least while violet color bends the most The different colors bend at different angles with respect to the incident ray as they pass through a prism due to refraction.</p>	5
23	<p>(a) The ratio of speed of light in vacuum to the speed of light in medium is called absolute Refractive index of the medium.</p> <p>(b) (i) medium C + Reason (ii) medium A + Reason (iii) towards the normal + Reason (iv) less than unit + Reason</p>	5
24	<p>(a) $\frac{1}{v} + \frac{1}{u} = \frac{1}{f}$ mirror formula $\frac{1}{v} - \frac{1}{u} = \frac{1}{f}$ lens formula</p> <p>(b) It means the height of image is 4 times the height of object and image virtual and erect. (c) Fig 10.7 (f) and (c) NCERT page 166</p>	5
SECTION - B		
25	(c)	1

26	(b)		1
27	(c)		1
28	(a)		1
29	(a)		1
30	(a)		1
31	(d)		1
32	(b)		1
33	(c)	fertilization	1
34	(a) (b)	blue to red Water, Clear / homogenous	2
35	(i) (ii)	Slide first observe under low power and then high power of the microscope. Bring down the eye piece of microscope slowly and gradually.	2
36		Correct ray diagram when object is placed between optical centre and focus of a convex lens	2
		-o0o0o0o-	