CBSE Class 10 Science Sample Paper SA 1 Set 1

SUMMATIVE ASSESSMENT- 1
Subject: Science
CLASS-X

Time:3hrs
M.M:90

General Instructions:

1.The question paper comprises of two sections, A and B, you are to attempt both the sections
2.All questions are compulsory
3. Question numbers 1 to 3 in section A are one mark question. These are to be answered in one word or one sentence
4.Question numbers 4 to 7 are two mark questions, to be answered in about 30 words
5.Question numbers 8 to 19 are three marks questions, to be answered in about 50 words
6.Question numbers 20 to 24 are five marks questions, to be answered in about 70 words
7. Question numbers 25 to 42 in section B are multiple choice questions based on practical skills. Each question is a one mark question. You are to choose one most appropriate response out of the four provided to you

SECTION- A

1	Name the gases evolved at anode and cathode by the electrolysis of brine	1
2	What is the lowest total resistance that can be secured by the combination of four coils of resistance 4Ω, 8Ω, 12Ω and 24Ω?	1
3	What will happen to a plant shoot if sunlight falls on it from one direction only? What do you call this movement?	1
4	List two reasons which limit the usage of solar cells for harnessing energy for domestic use	2
5	How is tidal energy harnessed for producing electricity?	2
6	What are amphoteric oxides? Choose the amphoteric oxide from amongst the following $Na_2O, ZnO, Al_2O_3, CO_2, H_2O$	2
7	Give reasons, a)Ores are usually converted in to oxides during the process of extraction b)Ionic compounds have high melting points	2
8	List the disadvantage of using biomass as fuel in the conventional manner Give two examples of technological input to improve efficiency of these fuels	3
9	How will magnetic field produced at a point P by a current carrying circular coil change if we increase the: a)Value of current flowing through the coil b)Distance of P from the coil c) Number of turns of the coil ?	3

10 On mixing the aqueous solutions of lead nitrate and potassium iodide, an insoluble precipitate is obtained 3

a) Name the ppt. and indicate the colour of the ppt. formed

b)Write the balanced chemical equation for this reaction

11 What is electro magnetic induction? State the rule to determine the direction of current induced in a coil due to its rotation in a magnetic field 3

12 A shiny brown coloured metal 'X' on heating in a china dish becomes black in colour 3

a)Name the metal 'X' and the black coloured compound formed

b)Write the balanced chemical equation of the reaction that takes place

13 a)What are redox reactions? 3

b)Identify the substance oxidised,substance reduced,oxidising agent and reducing agent in the following reaction

$MnO_2 + 4HCl \rightarrow MnCl_2 + Cl_2 + 2H_2O$

14 a)What is the chemical name of bleaching power? 3

b) Write the chemical equation of the reaction involved in its preparation

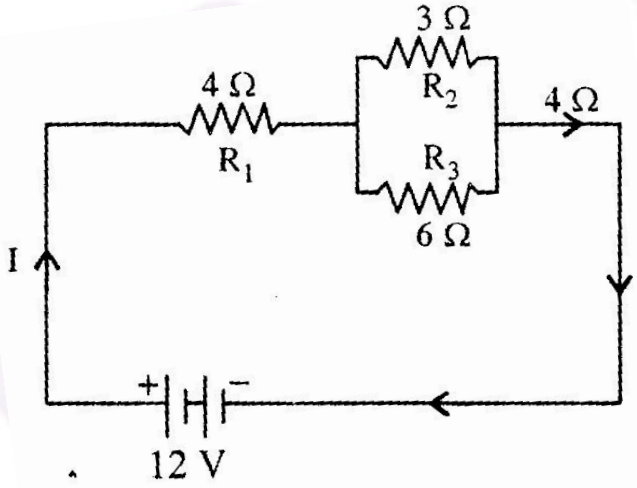
c)Write any two uses of bleaching powder

15 The following circuit diagram shows combination of three resistors R_1, R_2 and R_3. Find: 3

a)Total resistance of the circuit

b)Total current flowing in the circuit and the

c) Potential difference across R_1 ?



16 A current of 4 ampere flows in a wire of resistance 60Ω. Calculate 3

a)power dissipated in the wire

b)Potential difference across the wire

c)Electrical energy consumed in 2 minutes

17 Small intestine of herbivores is longer than that of carnivores like tiger .Why?
How does the acidic food present in the small intestine is converted in to alkaline for the action of pancreatic enzymes? 3
Name the protein and lipid digesting enzymes present in the pancreatic juice.

18 Draw a neat labeled diagram of reflex arc. 3

19 How does our body respond when adrenaline is secreted in to the blood? 3

20 a)State Ohm's law and express it mathematically 5
b)Draw a schematic diagram of a circuit containing the following electrical components;
a resistance, a voltmeter, an electric bulb, a cell, an ammeter and a plug key
c) Why is series arrangement not used for domestic circuit?

21 a)What is a solenoid? 5
b)Draw the pattern of magnetic field formed around a current carrying solenoid
c) Why two magnetic field lines cannot intersect each other?

22 a)How many water molecules are present in one formula unit of copper sulphate? 5
b)Name the sodium compound used for softening hard water
c) What effect does the concentration of H^+ ions have on the nature of solution?
d)What are the components of baking powder?
e) What happens when water is added to Plaster of Paris?

23 a) In the electrolytic refining of copper what would you take as the anode, the cathode and the electrolyte? Also give relevant diagram for the electrolytic refining 5
b)Write a balanced equation for the reaction that takes place when steam is passed over red hot iron

24 What causes dental caries or tooth decay?
Suggest two good habits to avoid dental caries and to maintain healthy teeth.
How are alveoli and nephrons designed to maximize the exchange of gases and filtration of blood respectively? 5

SECTION-B

25 Dilute hydrochloric acid is added to solid sodium carbonate. It is observed that : 1
a)no change takes place b)a loud sound is produced
c)a brisk effervescence occurs d) the solution turns blue black

26 While doing an experiment a student observed that the blue colour of the copper sulphate solution was changed to pale green by immersing a metal rod in it. The metal of the rod used by the student is: 1
a)iron b)zinc c)silver d)aluminium

27 In an experiment to test the pH of a given sample using pH paper , four students recorded the following observations for the sample tested by each one of them:

Sample taken	pH paper colour turned to
i)Water	Blue
ii)Dil.HCl	Red
ii)Dil.NaOH	Blue
iv)Dil. Acetic acid	Orange

1

The student who took the incorrect observation is :

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

28 When zinc metal react with sodium hydroxide solution the gas liberated is :

a)oxygen b) nitrogen c)chlorine d) hydrogen 1

29 The correct method of finding the pH of a solution is to :

a)heat the solution in a test tube and expose the pH paper to the vapours formed 1

b)put a drop of the solution on the pH paper using a dropper

c)dip the pH paper in the solution

d)pour the solution on the pH paper

30 Arjun adds aqueous solution of barium chloride to an aqueous solution of sodium sulphate. He would observe that : 1

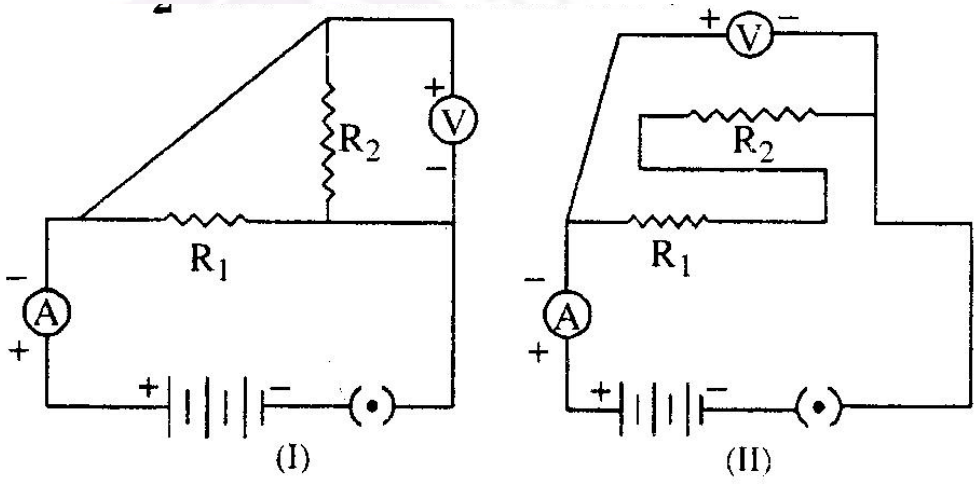
a)a pungent smelling gas is evolved

b)the colour of solution turns red

c)a white ppt. is formed immediately

d) an yellow ppt. is formed after some time

31 The resistors R_1 and R_2 are connected in

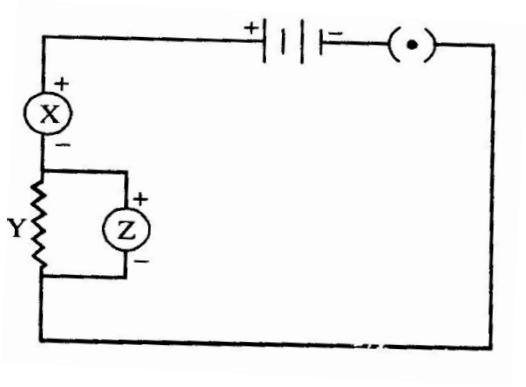


1

a)parallel in both the circuits

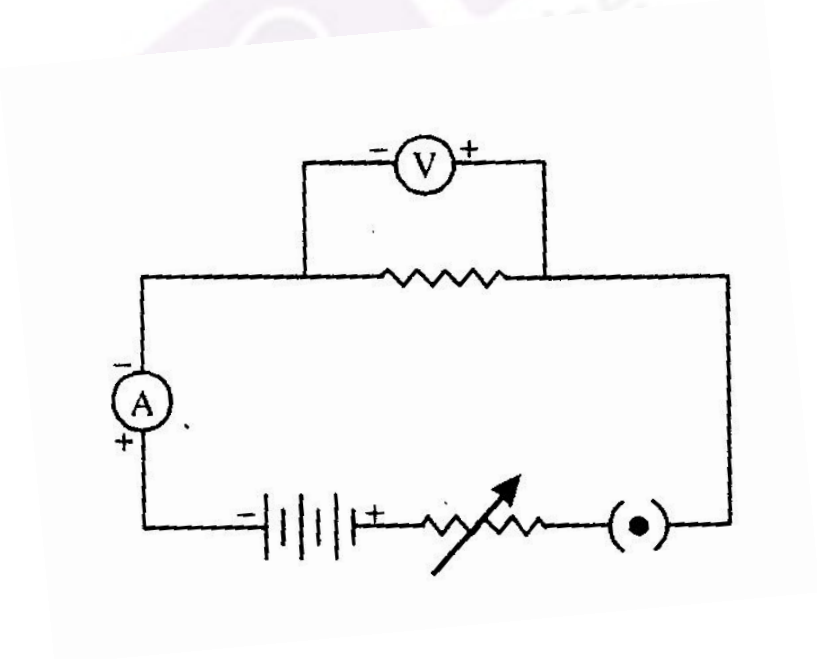
b)series in both the circuits
c)parallel in circuit I and in series in circuit II
d)series in circuit I and parallel in circuit II

32 A student draws the circuit diagram as shown. The parts labeled X,Y and Z respectively are , 1



a)ammeter,resistor,voltmeter
b)ammeter,voltmeter,resistor
c)voltmeter,resistor,ammeter
d)voltmeter, ammeter, resister

33 The following circuit diagram shows the experimental set up for the study of dependence of current on potential difference. Which two circuit components are connected in series ? 1

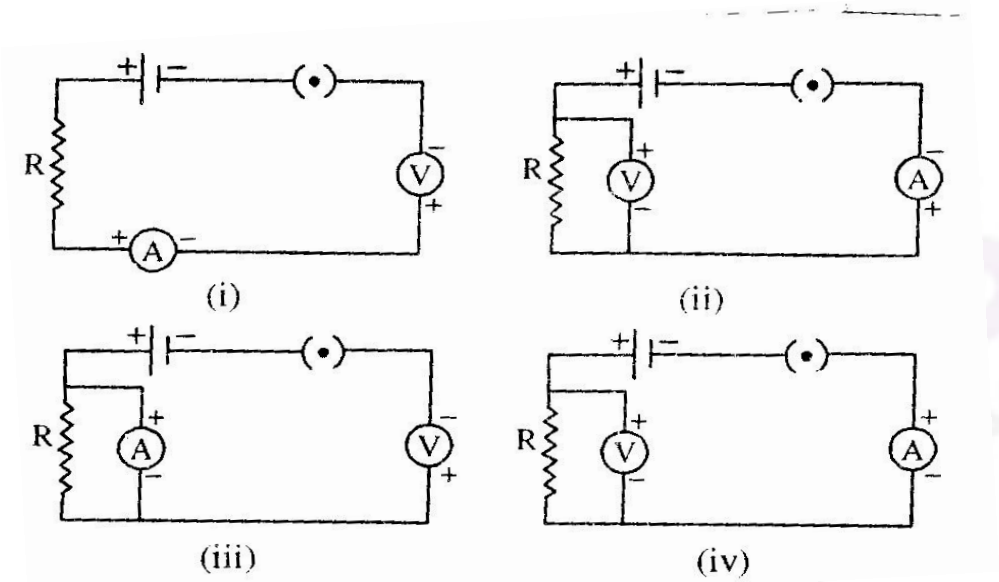


a)battery and voltmeter
b)ammeter and voltmeter
c)ammeter and rheostat
d)resister and voltmeter

34 An ammeter can read current up to 5A and it has 20 divisions between marks 0 and 2 on its scale. The least count of the ammeter is : 1

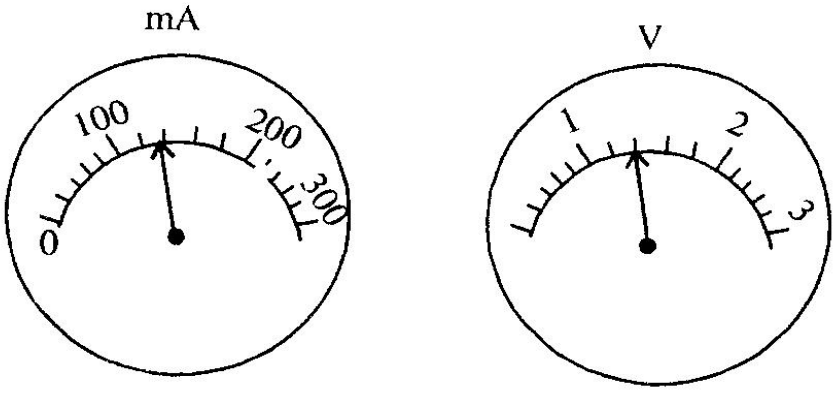
a)0.1A b)0.02A c)0.01A d)0.2A

35 Identify the circuit diagram in which the electrical components have been properly connected. 1



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

36 The current through the resister connected in an electric circuit and the potential difference across its ends are shown in the diagram. 1

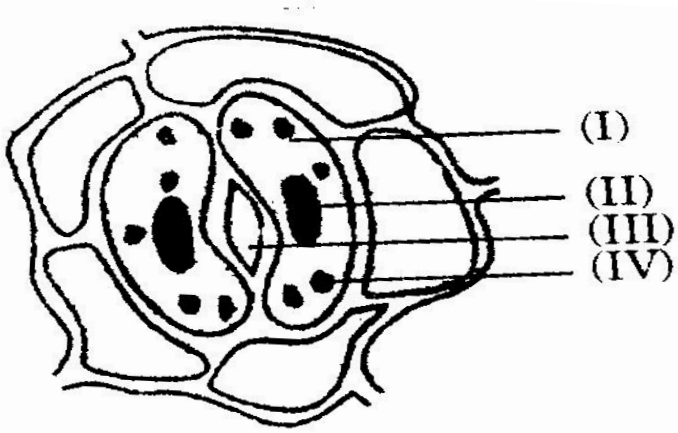


The value of the resistance of the resistor is :
a)25Ω b)20Ω c)10Ω d)15Ω

1

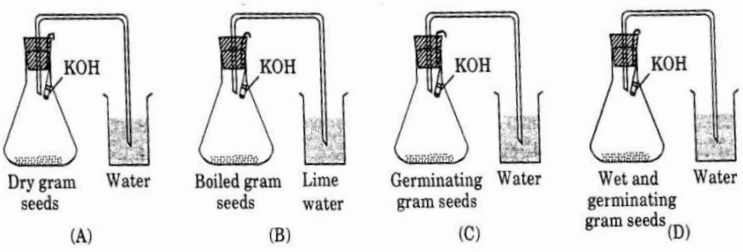
37 To prepare a good temporary mount of the leaf peel showing many stomata ,the student has to get the peel from the :
a)tip of the leaf
b)lower surface of the leaf
c)upper surface of the leaf
d)none of the above

38 In the following sketch of the stomatal apparatus the parts I,II,III,IV were labelled differently by four students: 1



The correct labelling out of the following is:
a) (I)guard cell, (II)stoma (III)starch granule (IV)nucleus
b) (I)cytoplasm, (II) nucleus (III) stoma (IV)chloroplast
c) (I)guard cell, (II) starch granule (III) nucleus (IV)stoma
d)(I)cytoplasm, (II) chloroplast (III) stoma (IV)nucleus

39 After performing the experiment to show that germinating seeds give out carbon dioxide during respiration, students drew the following diagrams. 1



The correct labeled diagram is:

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

40 What is the right procedure to remove chlorophyll from a destarched leaf ? 1

a)boil the destarched leaf in lime water

b) boil the destarched leaf in alcohol

c)boil the destarched leaf in water only

d)boil the destarched leaf in mixture of alcohol and water

41 The function of KOH in the experimental set up to show that CO_2 is released during respiration is : 1

a)to enhance respiration

b)to release O_2 for respiration

c)to remove water vapour from the flask

d)to absorb CO_2 released by germinating seeds

42 The teacher instructed a student to place a healthy potted plant in a dark room for 24 hours prior to an experiment on photosynthesis. The purpose of placing it in a dark room is: 1

a) To increase the intake of CO_2
b) To activate the chloroplasts in leaves
c) To destarch the leaves
d) To denature the enzymes in the leaves