H.C. Auxilium

Summative Assessment 1

Class X (2012 – 2013)

SCIENCE

Time: 3Hrs **M.M:90**

Date: 19/9/2012

General Instructions:

- *All questions are compulsory.*
- *The question paper comprises of two sections, A and B. you are to attempt both the sections.*
- *Questions of section A and B are to be attempted separately.*
- *Questions 1 to 3 are one mark each and to be answered in one word or in one sentence.*
- *Questions 4 to 7 are two mark each*
- *Questions 8 to 19 are three mark each.*
- *Questions 20 to 24 are 5 mark each.*
- *Questions 25 to 42 are multiple choice questions.*

Section A

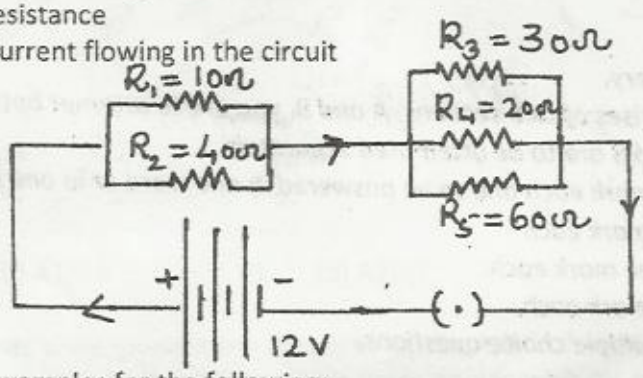
1. State Ohm's law.
2. What is Rancidity?
3. Name the following:
   (a) Cells that surround a stomatal pore.
   (b) An enzyme secreted from the gastric glands in the stomach that acts as proteins.
4. Explain why:
   (a) Solar cookers are covered with glass plate.
   (b) Solar cookers are painted black from inside.
5. What are amphoteric oxides? Explain the same using aluminium oxide as an example.
6. Give any two advantages and disadvantages of wind energy.
7. Write the balanced chemical equation and also mention the type of reaction for the following.
   (a) Potassium chloride + Silver nitrate → potassium nitrate + Silver chloride
   (b) Silver bromide on keeping in sunlight changes to silver and bromine.
8. (a) Name the four gases commonly present in bio gas.
   (b) Mention the advantages of bio gas plant.
9. (a) What are indicators? Give an example of
   (i) a universal indicator (ii) an olfactory indicator
   (b) Why does calcium hydroxide float on the surface of water?
10. Draw the respiratory system of man and give the differences between aerobic and anaerobic respiration.

    OR

    What is Reflex Action? With the help of a diagram and an example explain how a reflex are formed.
11. A torch bulb is rated 2.5 V and 0.75 A. Calculate
    (i) its power
    (ii) the resistance and the energy consumed if this bulb is light for 4 hours daily for 30 days.
12. What is a Redox Reaction? Identify the oxidising agent and the reducing agent in the following equations:
    (i) $MnO_2 + 4HCl \rightarrow MnCl_2 + 2H_2O + Cl_2$
    (ii) $CuO + H_2 \rightarrow Cu + H_2O$

13. (a) Where are the kidneys located in our body and give their importance.
(b) Draw the excretory system of man and label the parts.
(c) Give the differences between Ureters and urethera.

14. If in the given figure R1= 10Ω, R2= 40Ω, R3 = 30Ω, R4= 20Ω and R5= 60Ω and a 12V battery is connected to the arrangement. Calculate
(i) the total resistance
(ii) The total current flowing in the circuit



15. (a) Give the examples for the following:
(i) A non metal which is lustrous.
(ii) A metal that can be cut through knife.
(iii) A non metal that is a good conductor of electricity.
(b) A compound 'X' on reaction with sodium carbonate evolves a colourless odourless gas which turns lime water milky. Identify the gas involved and with the help of chemical equation explain the lime water test.

16. **Give reason why:**
(a) Iodised salt is advisable to individuals.
(b) Haemoglobin is important for the body.
(c) If the leaves of a healthy potted plant were coated with Vaseline to block the stomata, will the plant remain healthy for long? Give reason.

17. (a) Draw the magnetic field line around a single loop of wire carrying electric current.
(b) List any two properties of magnetic field lines.

18. (a) Show the formation of MgO by the electron dot structure.
(b) Why do ionic compounds have high melting points?
(c) Why does a milkman add a small amount of baking soda to fresh milk?

19. State the rule to determine the direction of force experienced by a current carrying conductor in a magnetic field. How will the force get affected on?
(i) Doubling the magnitude of current.
(ii) Reversing the direction of current

20. (a) Draw the T.S of the heart and name the blood vessel that brings the oxygenated blood to it.
(b) Why do veins have valves within them and why are their walls thin in comparison to the arteries?
(c) Name the chamber in the heart which receives oxygenated blood.

OR

What are Tropic movements? Explain different type of directional movements with examples.

21. (a) What is meant by Calcination?
(b) With the help of a well labelled diagram explain the electrolytic refining of Copper.

OR

(a) With the help of balanced equations explain the extraction of
(i) A metal low in reactivity series
(ii) A metal in middle of reactivity series.
(b) What is corrosion? List any 2 ways to prevent it.

22. (a) With the help of a neatly labelled diagram, describe an activity to show that an acid solution in water conducts electricity but not a glucose solution.

(b) What is dilution? What happens to the pH value of a base when water is added to it?

OR

(a) What is chlor-alkali process? Give a balanced chemical equation to represent it.

(b) Write one use and chemical name for each of the following:

(i) Baking soda

(ii) Bleaching powder

(iii) Plaster of Paris

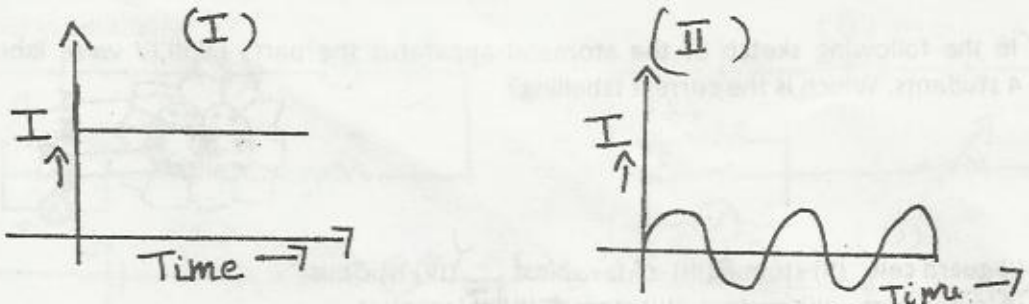
23. (a) What is electromagnetic induction?

(b) Explain the various methods of producing induced current.

(c) State the rule which give the direction of induced current.

(d) Name the device which works on the principle of electromagnetic induction.

OR



(a) Name the type of electric current in the two cases.

(b) Identify one source for each type of these current.

(c) What is the frequency of current in case II in India?

(d) Write two differences between the current in the two cases.

24. (a) What are the factors affecting the resistance of a conductor. Hence derive an expression for resistivity.

(b) What are the advantages of connecting electric devices in parallel with the battery instead of connecting them in series?

OR

(a) What is meant by saying that the potential difference between two points is 1V? Name the device that helps to measure the potential difference across a conductor.

(b) Electric resistance of some substances at 20°C are given below

Silver	$1.6 * 10^{-8}\ \Omega m$
Copper	$1.62 * 10^{-8}\ \Omega m$
Tungsten	$5.20 * 10^{-8}\ \Omega m$
Iron	$16 * 10^{-8}\ \Omega m$
Mercury	$94 * 10^{-8}\ \Omega m$
Nichrome	$100 * 10^{-6}\ \Omega m$

Answer the following questions

(i) Among them which one is a better conductor and why?

(ii) Which material would you advice to be used in electric heating device and why?

(iii) Give the mathematical expression for Joule's law of heating and represent each term.

Section B

25. While preparing a temporary stained mount of leaf epidermal peel the extra stain is removed by

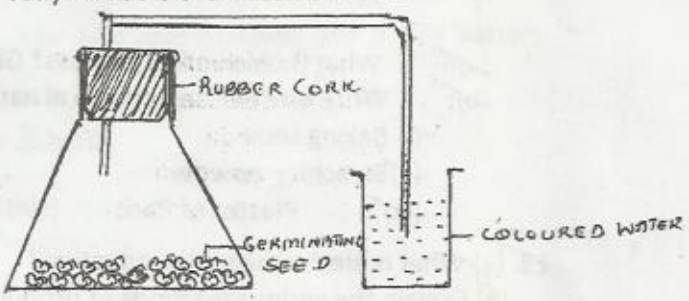
(a) Washing with water

(b) Washing with calcium chloride solution

(c) Soaking with filter paper

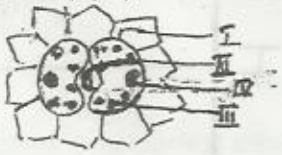
(d) Absorbing with cotton wool

26. The following set up is for the experiment to show that carbon dioxide is produced during respiration by use of KOH. Mona did not set up the experiment correctly. What is the mistake?



(a) She did not use germinating seeds
(b) She did not use small test tube with KOH solution
(c) The bent tube in the beaker is above the water level
(d) She did not use water in the beaker.

27. In the following sketch of the stomatal apparatus the parts I,II,III,IV were labelled differently by 4 students. Which is the correct labelling?



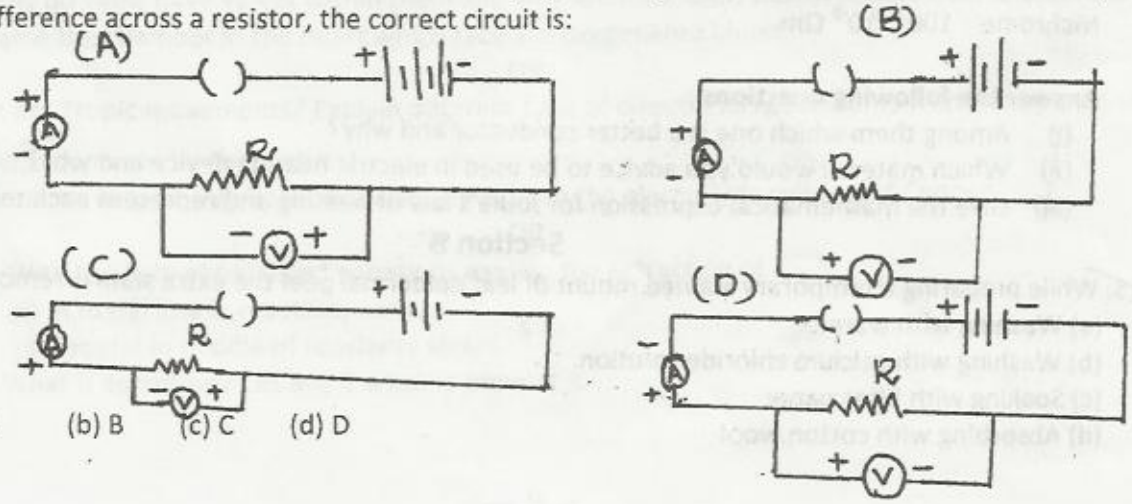
(a) (I) guard cell (II) stomata (III) chloroplast (IV) Nucleus
(b) (I) cytoplasm (II) nucleus (III) stomata (IV) chloroplast
(c) (I) guard cell (II) starch (III) nucleus (IV) stomata
(d) (I) cytoplasm (II) chloroplast (III) stomata (IV) nucleus

28. In order to test for starch in a leaf it is done by using
(a) Saffranin (b) Iodine (c) methylene blue (d) eosin

29. A student performed the starch test on leaf. Which is the correct sequence for the steps involved?
(a) (i) Leaf is kept in water at room temperature.
(ii) Leaf is then boiled in alcohol
(iii) Leaf is then dipped in iodine solution
(b) (i) Leaf is dipped in iodine solution
(ii) leaf is boiled in alcohol
(iii) leaf is kept in water at room temperature
(c) (i) leaf is boiled in alcohol
(ii) leaf is boiled in water
(iii) leaf is dipped in iodine solution
(d) (i) leaf is boiled in water
(ii) leaf is boiled in alcohol
(iii) leaf is dipped in iodine solution

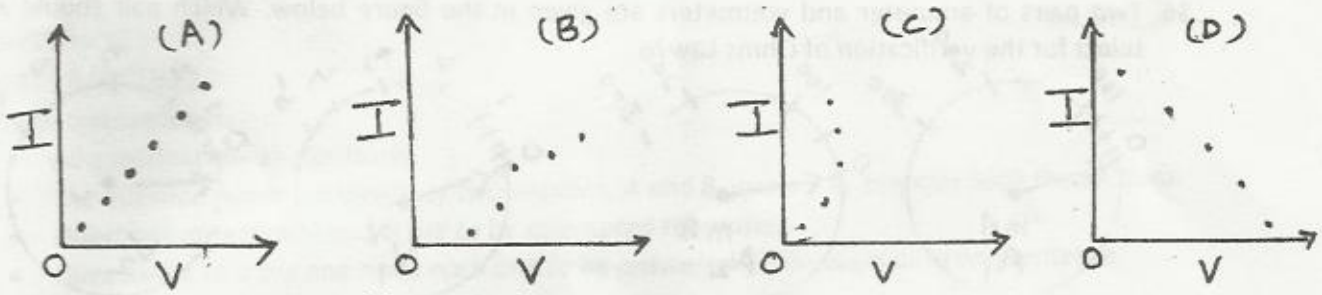
30. The seeds used in the experiment and show that carbon dioxide is given out during respiration are
(a) Dry seeds (b) Boiled seeds (c) Crushed seeds (d) Germinating seeds

31. Out of the four circuits shown for studying the dependence of the current on the potential difference across a resistor, the correct circuit is:



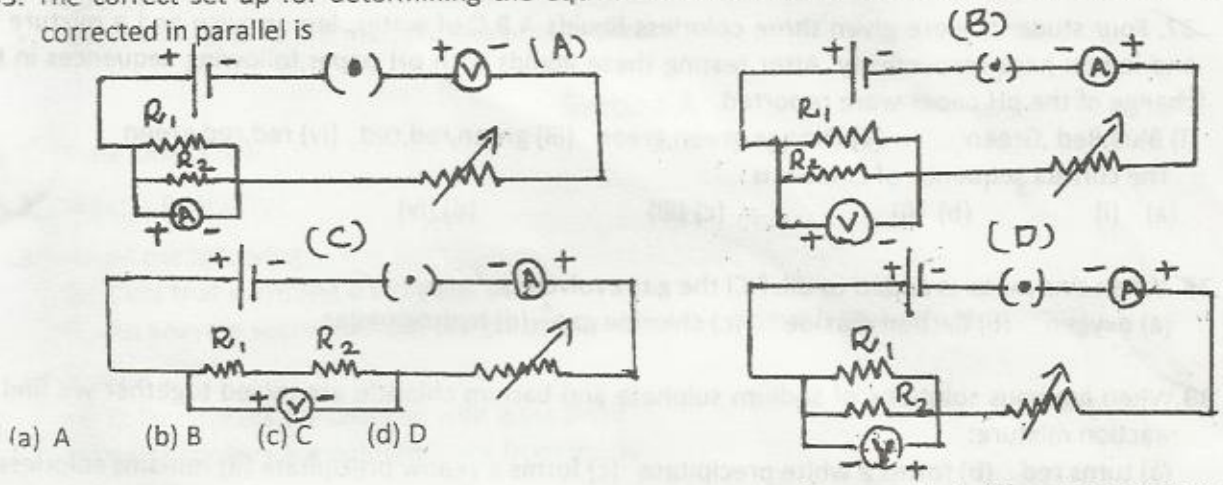
(a) A (b) B (c) C (d) D

32. The plot correctly showing the dependence of the current I on the potential difference V across a resistor R is:



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

33. The correct set up for determining the equivalent resistance of the two resistors R_1 and R_2 when corrected in parallel is



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

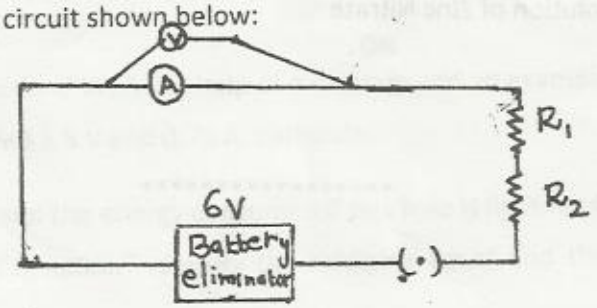
34. In an experiment to study dependence of current I on the potential difference across a given resistor ,students kept the plug key in the circuit closed for time t_1 and then open for time t_2. The times t_1 and t_2 for students A,B,C,D are in the table below:

Student	Closed time t1(sec)	Open time t2(sec)
A	30	60
B	60	30
C	60	15
D	45	15

The best choice of open and closed time is that of student

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

35. In an experiment to find the equivalent resistance of a series combination of two resistors R_1 and R_2 a student uses the circuit shown below:



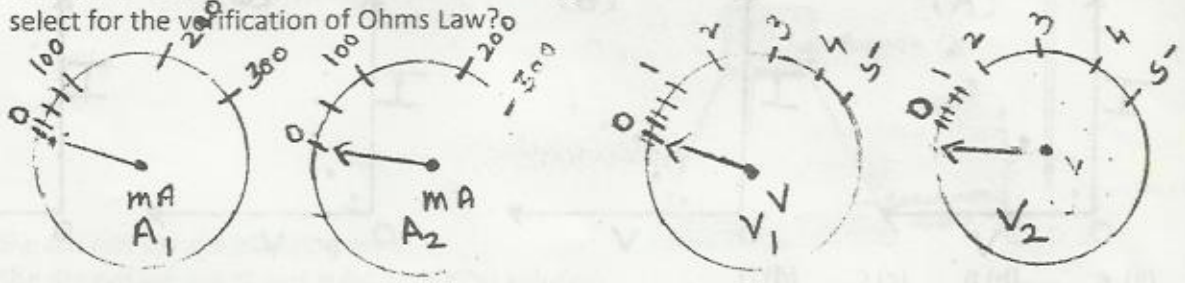
The circuit will give

(a) Correct reading for voltage V1, but incorrect reading for current I

(b) Correct reading for current I, but incorrect reading for voltage V

(c) Correct readings for both I and V
(d) Incorrect readings for both I and V

36. Two pairs of ammeter and voltmeters are given in the figure below. Which pair should a student select for the verification of Ohms Law?



(a) A1,V1 (b) A1,V2 (c)A2,V1 (d) A2,V2

37. Four students were given three colorless liquids A,B,C of water, lemon juice and a mixture of water and lemon juice respectively. After testing these liquids with pH paper,following sequences in the color change of the pH paper were reported.
(i) Blue,Red ,Green (ii) Orange,green,green (iii) green,red,red (iv) red,red,green
The correct sequence of colours is
(a) (i) (b) (ii) (c) (iii) (d) (iv)

38. When zinc metal is added to dil. HCl the gas evolved is
(a) oxygen (b) Carbon dioxide (c) chlorine gas (d) hydrogen gas

39. When aqueous solutions of sodium sulphate and barium chloride are mixed together we find that the reaction mixture:
(a) turns red (b) forms a white precipitate (c) forms a yellow precipitate (d) remains colorless

40. What is observed when a copper wire is dipped in a solution of copper sulphate
(a) A brisk effervesence takes place (c) Nothing happens
(b) A white precipitate is formed (d) A gas is evolved which burns with a pop sound

41. Four solutions I,II,III,IV were given to a student to test their acidic, basic nature using pH papers. He observed that the colour of the pH paper turned to red, blue, green and orange respectively when dipped in four solutions. The correct conclusion made by the student would be
(a) I,II,III are acidic (b) I and IV are acidic (c) II,III,IV are acidic (d) II and IV are acidic

42. Choose the correct statement
(a) A shiny brown deposit is obtained when iron metal is dipped in copper sulphate solution.
(b) A black deposit is obtained when iron metal is dipped in aluminium sulphate solution.
(c)A green deposit is obtained when zinc metal is dipped in copper sulphate solution.
(d) Al displaces Zn from a solution of Zinc Nitrate

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