

Kendriya Vidyalaya Sangathan, Mumbai Region

Summative Assessment I (2012-2013)

Class: X

Subject: Science

Max. Marks: 90

Duration: 3 Hrs.

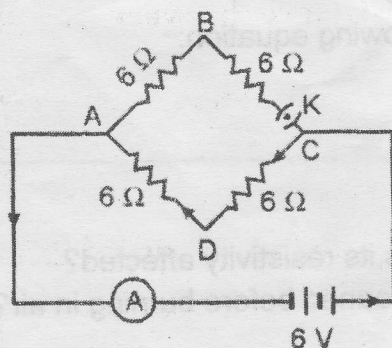
General Instructions:

1. The question paper comprises of two sections 'A' and 'B'. You are to attempt both the sections.
2. All questions are compulsory
3. There is no overall choice. However internal choice has been provided in all the five questions of 5-marks category. Only one option in each is to be attempted.
4. All questions of section A and all questions of section B are to be attempted separately.
5. Question numbers 1-3 in section A are 1-mark questions. These are to be answered in one word or one sentence.
6. Question numbers 4-7 are two mark questions, to be answered in about 40 words.
7. Question numbers 8-19 are three mark questions, to be answered in about 50-words.
8. Question numbers 20-24 are five mark questions, to be answered in about 70 words.
9. Question number 25-42 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. In the reaction represented by the following equation:
$$\text{CuO}_{(s)} + \text{H}_{2(g)} \rightarrow \text{Cu}_{(s)} + \text{H}_2\text{O}_{(l)}$$
 - a) Name the substance oxidised
 - b) Name the substance reduced
2. Name the constituents of biogas.
3. The length of a wire is doubled. How is its resistivity affected?
4. Why should a magnesium ribbon be cleaned before burning in air?

5. When potassium iodide solution is added to a solution of lead nitrate in a test tube, a precipitate is formed.
 - a) What is the colour of the precipitate?
 - b) Write balanced chemical equation for this reaction.
 - c) Name the type of reaction.
6. List two ways in which plants get rid of their wastes
7. Answer the following:
 - a) Which hormone is responsible for the changes noticed in females at puberty?
 - b) Dwarfism results due to deficiency of which hormone?
 - c) Blood sugar level rises due of deficiency of which hormone?
 - d) Iodine is necessary for the synthesis of which hormone?
8. When Iron rod is kept dipped in copper sulphate solution for some time, a brown coating is formed on the iron rod. Explain why? What change will you observe in the colour of the solution?
9. With the help of a diagram, explain the experiment to show that dry HCl gas does not show acidic character whereas HCl solution shows acidic character.
10. Give reasons:
 - a) A milkman adds a very small amount of a baking soda to fresh milk
 - b) The milkiness disappears on passing excess of CO_2 to lime water
 - c) We need to brush our teeth with toothpaste after eating sugary food
11. Describe with the help of a labelled diagram the electrolytic refining of copper
12. Differentiate between aerobic and anaerobic respiration
13. Give the various functions performed by the plant hormone
14. Calculate the electrical energy in kWh consumed in a month, in a house using two bulbs of 100W each and two fans of 60W each, if the bulbs and the fans are used for an average of 10 hours each day. If the cost per unit is Rs. 2.10, calculate the cost per month.
15. a) State Ohm's Law
 - b) Calculate the electric current in the given circuit when,
 - i. Key K is open
 - ii. Key K is closed



16. a) On what factors does the resistance of a conductor depend?
b) Name the component of an electric circuit that varies the resistance in a circuit.
17. What are magnetic field lines? Mention their important properties.
18. Name three forms in which energy from the ocean is made available for use. What are OTEC power plants? How do they operate?
19. Give reasons:
- a) Solar cookers are covered with plane glass plates
 - b) Biogas is considered as an ideal fuel
 - c) Making of solar cells is expensive
20. a) What is a solenoid? Draw a sketch of the pattern of field lines of the magnetic fields through and around a current-carrying solenoid.
b) Consider a circular loop of wire lying in the plane of a table. Let the current pass through the loop clockwise. Apply the right-hand rule to find out the direction of the magnetic field inside and outside the loop.

OR

Draw the pattern of magnetic field lines through and around a current carrying solenoid. What does the magnetic field pattern inside the solenoid indicates. How can this principle be utilised to make an electromagnet. State two ways by which strength of this electromagnet can be increased?

21. a) Give an example of a metal which
- i) can be easily cut with a knife
 - ii) is a liquid at room temperature
- b) Write chemical equation for the reaction when
- i) Steam acts on red hot iron
 - ii) Zinc is added to iron sulphate solution
- c) What are alloys?
d) Why are food cans coated with tin and not zinc?

OR

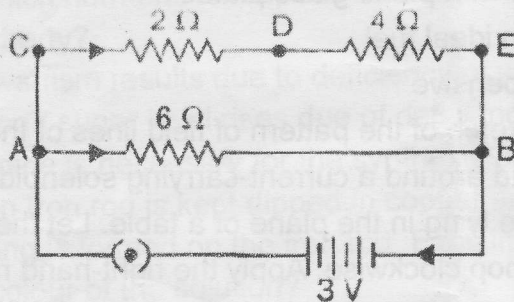
Account for the following:

- a) Melting points and boiling points of ionic compounds are high.
- b) Aluminium is more reactive than iron, yet there is less erosion of Al.
- c) Solder is used for welding electrical wires together.
- d) A sulphide ore is converted into its oxide to extract the metal.
- e) Tarnished copper vessels are cleaned with tamarind juice.

22. a) What are two vital functions of human kidney?
 b) Draw labelled diagram of human urinary system.

OR

- a) Draw and describe the role of various parts of human brain.
 23) In the circuit shown below, calculate:



- a) Total resistance in arm CE.
 b) Total current.
 c) Current in arm AB and CE.
 d) Potential difference across 2ohm and 4 ohm resistances.

OR

What is resistivity? Calculate the resistance of a material if its resistivity is 1.2×10^{-9} ohm-metre having diameter of 4mm and length of 1.2m.

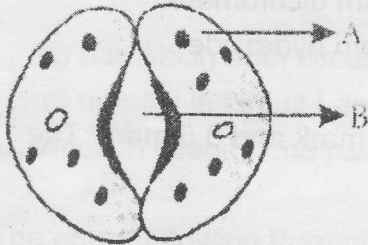
- 24) Translate the following statements into chemical equations and then balance them
- Hydrogen gas combines with nitrogen to form ammonia.
 - Hydrogen sulphide gas burns in air to give water and sulphur dioxide.
 - Barium chloride reacts with aluminium sulphate to give aluminium chloride and a precipitate of barium sulphate.
 - Potassium metal reacts with water to give potassium hydroxide and hydrogen gas.
 - Zinc combines with silver nitrate to form zinc nitrate and silver.

OR

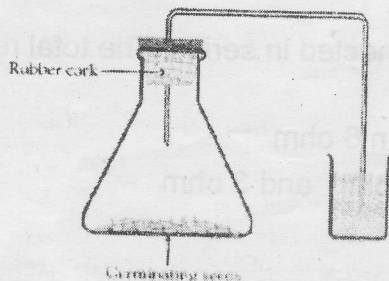
How do we come to know that a chemical reaction has taken place.

SECTION B

- 25) While preparing a temporary stained mount of a 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 parts shown as A and B in the given figure are



- a) A is epidermal cell, B is stomatal pore
 b) A is guard cell, B is stomatal pore
 c) A is epidermal cell, B is guard cell
 d) A is guard cell, B is epidermal cell
- 27) For the experiment "Light is necessary for photosynthesis", the potted plant is first kept in darkness for a day. This is to:
- a) deactivate the chloroplasts. b) destarch leaves
 c) activate chloroplasts d) prepare leaves for photosynthesis
- 28) A leaf is boiled in alcohol before using iodine for starch test in order to:
- a) dissolve starch b) dissolve chlorophyll
 c) soften the leaf d) make it react with iodine
- 29) The following experiment was set up to show that a gas is given out during respiration. But there was no rise in water level. This was because:



- a) germinating seeds have not been kept under water in the flask.
- b) water is kept in the beaker instead of lime water.
- c) the cork on the flask is made of rubber.
- d) no substance is kept in the flask to absorb the gas given out by the seeds.

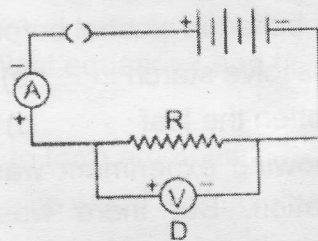
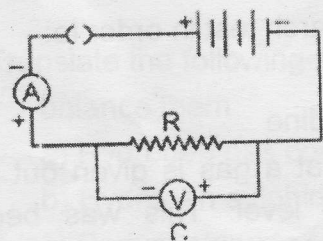
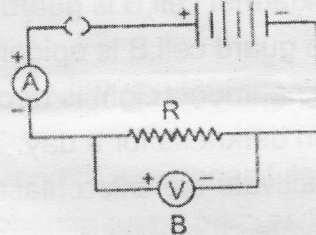
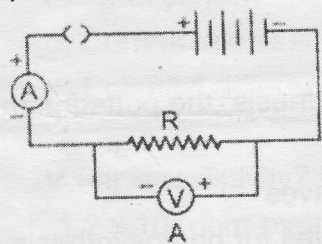
30) The chemical required in the experiment to show that carbon dioxide gas is released during respiration, is:

- a) potassium bicarbonate b) potassium dichromate
- c) potassium permanganate d) potassium hydroxide

31) In a voltmeter, there are 20 divisions between 0 mark and 0.5 mark. The least count of voltmeter is:

- a) 0.0020 V b) 0.025 V
- c) 0.050 V d) 0.250 V

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

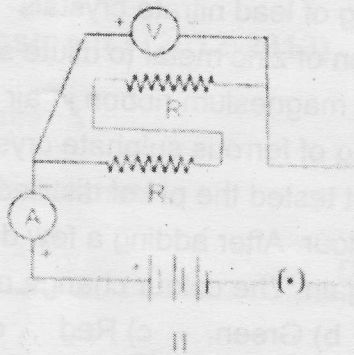
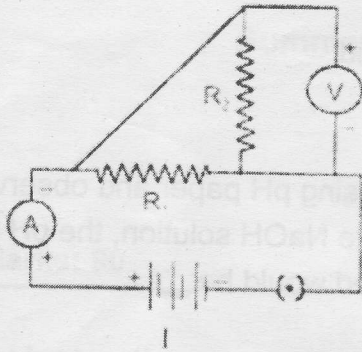


- a) A b) B c) C d) D

33) 3 resistors of 1ohm, 2 ohm and 3 ohmare connected in series. The total resistance of the combination should be:

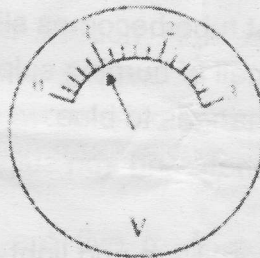
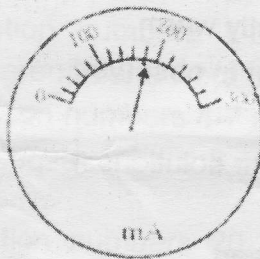
- a) less than 1ohm b) greater than 6 ohm
- c) equal to 6 ohm d) between 1ohm and 3 ohm

34) The resistors R1 and R2 are connected in:



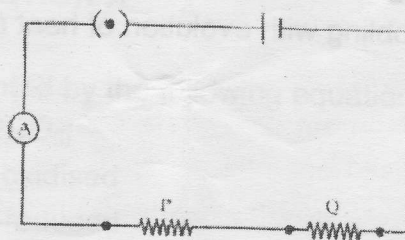
- a) parallel in both circuits b) series in both circuits
- c) parallel in circuit I and series in circuit II
- d) series in circuit I and parallel in circuit II

35) The current flowing through a resistor connected in an electrical circuit and potential difference developed across its ends are shown in the given diagram. Resistance in ohms is:



- a) 25 b) 20 c) 5.5 d) 10

36) In the circuit diagram given below, an ammeter reads 0.45 A. If the resistance P is removed from the circuit. The magnitude of current shown by ammeter is:



- a) 0.45 A b) Less than 0.45 A c) More than 0.45 A d) None of these

- 37) Which amongst the following does not show gas evolution?
- a) Heating of lead nitrate crystals
 - b) Addition of zinc metal to dilute sulphuric acid
 - c) Burning of magnesium ribbon in air
 - d) Heating of ferrous sulphate crystals
- 38) A student tested the pH of distilled water by using pH paper and observed green colour. After adding a few drops of dilute NaOH solution, the pH was tested again. The colour change now observed would be:
- a) Blue
 - b) Green
 - c) Red
 - d) Orange
- 39) Which one of the following will be required to identify the gas evolved when dilute hydrochloric acid reacts with metal?
- a) Blue litmus solution
 - b) Red litmus solution
 - c) A burning splinter
 - d) Lime water
- 40) When An aluminium strip is kept immersed in freshly prepared ferrous sulphate solution taken in a test tube, which type of change is observed in solution?
- a) The green solution slowly turns brown.
 - b) The lower end of the test tube becomes slightly warm.
 - c) A colourless gas with smell of burning sulphur is observed.
 - d) Light – green solution changes to blue.
- 41) The colours of copper sulphate and iron sulphate solutions respectively are:
- a) Yellow and light-green
 - b) Blue and light-green
 - c) Blue and dark-green
 - d) Green and light-blue
- 42) Which of the following is a correct observation when water is added to lime?
- a) No change and a hissing sound.
 - b) Vigorous bubbling and a hissing sound.
 - c) Slow bubbling with no sound.
 - d) Vigorous bubbling with evolution of heat and a hissing sound.
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