Vanshika Sharma 10-A 30

BLUEBELLS SCHOOL INTERNATIONAL

SUMMATIVE ASSESSMENT-1

CLASS : X

SUBJECT : SCIENCE SET-A

Time allowed: 3 hours **Maximum Marks: 90**

General Instructions:

a) The question paper consists of 39 questions in 8 pages.
b) All questions are compulsory. However, internal choice has been given in all questions of 5 marks weightage.
c) The question paper comprises of two sections, A and B. You are to attempt both the sections.
d) Questions 1 to 4 in section A are one mark questions. These are to be answered in one word or in one sentence.
e) Questions 5 to 10 in section A are two marks questions. These are to be answered in about 30words each.
f) Questions 11 to 22 in section A are three marks questions. These are to be answered in about50 words each.
g) Questions 23 to 25in section A are five marks questions. These are to be answered in about 70 words each.
h) Questions 26 to 33are multiplechoice questions based on practical skills. Each question of multiple choice questions is a onemark question. You are to select one most appropriate response out of the four provided to you. Questions from 34 to 36 are short answer type questions carrying two marks each.

SECTION A

Q1. Why are many thermal power plants set up near coal or oil fields? (1)

Q2. What is the lowest total resistance that can be secured by the combination of four coils of resistance 4Ω, 8Ω, 12Ω and 24Ω? (1)

Q3. Why is it necessary to separate oxygenated blood from deoxygenated blood in mammals? (1)

Q4. Which bases are called alkalis? Give an example of alkali. (1)

Q5. Write the chemical name and formula of bleaching powder. How is it prepared? (2)

Q6. What are amphoteric oxides? Choose the amphoteric oxide from amongst the following:
$Na_2O, ZnO, Al_2O_3, CO_2, H_2O$ (2)

Q7. How are alveoli designed to maximize the exchange of gases? (2)

Q8. What causes dental caries or tooth decay? Suggest two good habits to avoid dental caries and to maintain healthy teeth. (2)

Q9. What is the value of alternating current in India? Why is alternating current considered to be advantageous over direct current for long range transmission of electric energy? (2)

Q10. List two reasons which limit the usage of solar cells for harnessing energy for domestic use. (2)

Q11. Why the medium becomes acidic in our mouth? What is the ill effect of the acidic medium? How can this be prevented? (3)

Q12. What are the different ways in which glucose is oxidized to provide energy in various organisms? (3)

Q13. What are nastic movements? How are they different from tropic movements? (3)

Q14. Draw a neat labelled diagram of a neuron. (3)

Q15. What happens when copper is burnt in air?

(i) Give the equation for above reaction.

(ii) What type of reaction is it?

(iii) What happens when hydrogen is passed over the product obtained in step above? Give equation. (3)

Q16. Design an activity to show a decomposition reaction in which light is used to decompose a reactant. Write the chemical equation for the reaction and state its one use. (3)

Q17. Explain why:

(i) Colour of copper sulphate crystal changes on heating.

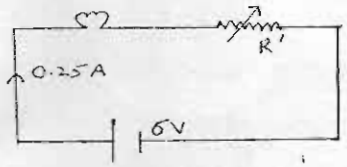
(ii) Baking soda acts as an antacid.

(iii) An acid should be added to water while diluting it.(3)

Q18. a)What are redox reactions?

b)Identify the substance oxidised,substance reduced,oxidising agent and reducing agent in the following reaction: $MnO_2 + 4HCl \rightarrow MnCl_2 + Cl_2 + 2H_2O$ (3)

Q19. (a) State Ohm's law. What is the nature of volt-ampere graph?



(b) A 6V battery is connected across a lamp whose resistance is 20Ω through a variable resistor. If the current flowing through circuit is 0.25 A, what is the value of the resistance from theresistor which must be used? (3)

Q20. Electricity theft is at the centre of focus all over the world but electricity theft in India has a significant effect on the Indian economy as this figure is considerably high. The loss on account of theft is reflected in the electricity company account books. Thus, costs are routinely passed onto the actual customers in the form of higher energy charges.

(i)Write the commercial unit of electric energy.

(ii) Do you think is this practice of electricity theft good? Does your conscious allow to do it?

(iii) How can you improve such mindset? (3)

Q21. Draw the pattern of lines of force due to a magnetic field through and around a current carrying loop of wire. How would the strength of the magnetic field produced at the centre of the circular loop be affected if:

(i) the strength of the current passing through this loop is doubled?

(ii) the radius of the loop is reduced to half of the original radius? (3)

Q22. Explain how hydroenergy can be converted into electric energy. State two advantages of hydroenergy. (3)

Q23. (A) Give reasons for the following :-

(i) Ionic compounds have high melting point

(ii) Curd&sour substances are not kept in copper vessels

(iii) Carbonate and sulphide ores are usually converted into oxides during the process of extraction.

(B) Compound X and aluminium are used to join railway tracks.

(i) Identify the compoundX

(ii) Name the reaction

(iii) Write down the reaction.

OR

(i) Write electron dot structure of oxygen and magnesium.

(ii) Show the formation of Sodium oxide and magnesium chloride

(iii) Explain a method to extract potassium from its ore. (5)

Q24. (i) Define the term 'volt'

(ii) State the relation between work , charge and potential difference for an electric circuit. Calculate the potential difference between the two terminals of a battery if 100 J of work is required to transfer 20 C of charge from one terminal to other. - 2

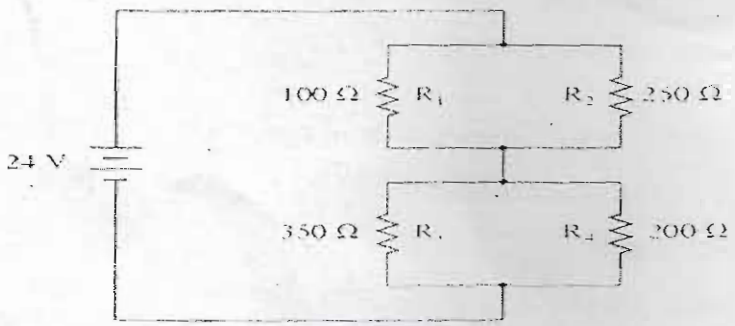
(iii)Why is the tungsten used almost exclusively for filament of an electric lamp?

(iv) Why is the series arrangement of appliances not used for domestic circuits?

OR

(A)

A series-parallel combination circuit



In the figure R1 = 100 Ω, R2 = 250 Ω , R3 = 350 Ω and R4 = 200 Ω and a battery is connected to the arrangement. Calculate

(i) the total resistance

(ii) the total current flowing in the circuit.

(b) Give two examples for applications of heating effect of electric current. (5)

Q25.(A) Draw a diagram of human alimentarycanal and label on it:

(i) Gall bladder, (ii) Liver (iii) Pancreas (iv) small intestine

(B) What is emulsification of fats? Why is it necessary?

OR

(A) Draw the human excretory system and label on it:

(i) Kidney, (ii) Aorta (iii) ureter (iv) Urinary bladder

(B) What is the purpose of sending blood to kidneys for filtration? (5)

Section B

Q25. On immersing iron nail in copper sulphate solution for a few minutes,you will observe:

(a) no reaction takes place.

(b) thecolour of solution changes to green.

(c) thecolour of solution fades away.

(d) the iron nails begin to glow. (1)

Q26. On mixing aqueous solutions of two substances you get an insoluble product,you will classify the reaction as:

(a) combination reaction (b)single displacement reaction

(c) decomposition reaction (d)double displacement reaction (1)

Q27. A blue litmus paper was first dipped in dil HCL and then in dilNaOH solution. It was observed that the colour of the litmus paper:

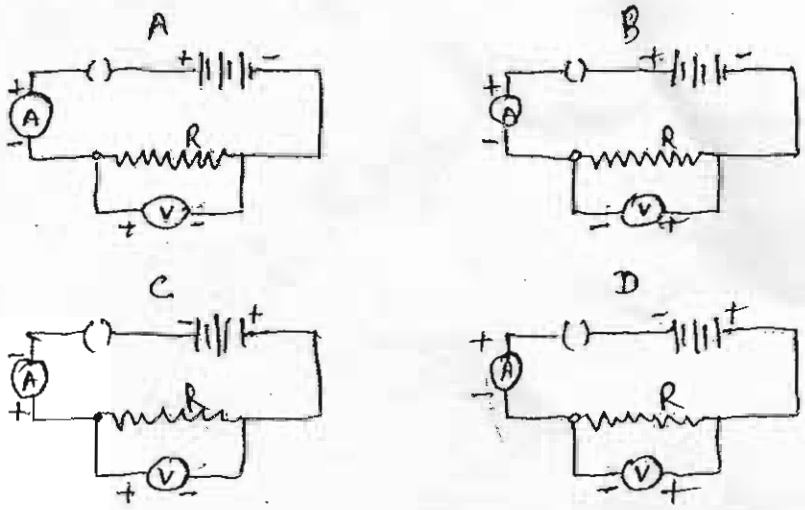
(a) Changed to red.

(b) Changed first to red and then to blue.

(c) Changed blue to colourless.

(d) Remained blue in both the solutions. (1)

Q28.



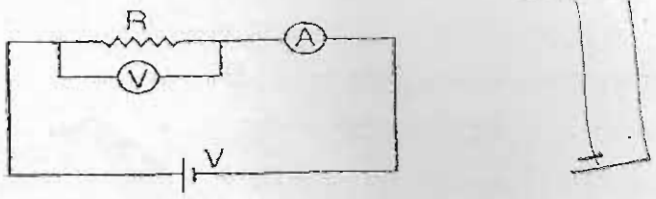
Out of the four circuits shown for studying the dependence of the current on the potential difference across a resistor, the correct circuit is:

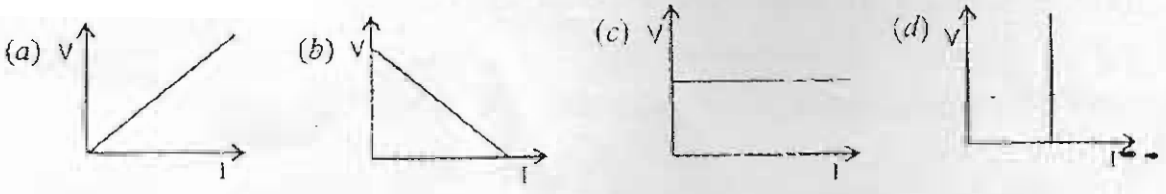
(a) A (b) B (c) C (d) D (1)

Q29.In a voltmeter there are 20 divisions between the 0 mark and 0.5 V mark. The least count of thevoltmeter is:

(a) 0.020 V (b) 0.025 V (c) 0.050 V (d) 0.250 V (1)

Q30. Using the adjoining circuit, current and potential difference are measured and plotted in a graph.





(1)

Q31. A student set up the apparatus for the experiment to show that CO_2 is released during respiration. After 2 hours, he would observe that:

(a)KOH turns milky

(b)Water level rises in the bent tube in the beaker

(c)Water level decreases in the bent tube in the beaker

(d)Water turns turbid in the beaker(1)

Q32. To determine that light is essential for photosynthesis, following are the steps, but not in sequence:

(i) Pluck the leaf and do the starch test.

(ii)Keep the selected plant in sunlight.

(iii)Destarch the plant for 48-72 hours.

(iv)Cover the leaf with black paper strip.

The correct sequence is:

(a) (iii), (i), (ii), (iv) (b) (iii), (ii), (iv), (i)

(c) (iii), (iv), (ii), (i) (d) (i), (ii), (iv), (iii) (1)

Q33. A well stained leaf peel preparation when focused under high power of the microscope would show:

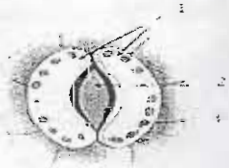
(a) Epidermal cells, stomata and guard cells, each with one nucleus and many chloroplasts.

(b) Epidermal cells, stomata and guard cells, each with many nuclei but one chloroplast.

(c) Stomata and guard cells without nuclei or chloroplast.

(d) Stomata but no guard cells or epidermal cells.(1)

Q34. The following diagram shows the stomatal apparatus as observed in the mounted slide. Its parts have been labelled with numbers. Identify any two parts and write their functions.



(2)

Q35. Rahul adds aqueous solution of barium chloride to an aqueous solution of sodium sulphate. What would he observe? (2)

Q36. How will you connect a given set of resistors so that the equivalent resistance is increased? Give reason for your answer. (2)