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class - X - D
Roll no - 27

SUMMATIVE ASSESSMENT - I, 2016-17
SCIENCE
Class - X

UJWSPGB
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Time Allowed : 3 hours

Maximum Marks : 90

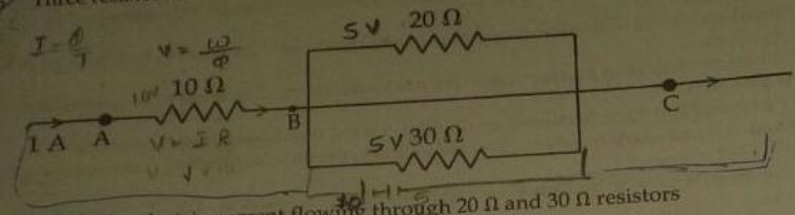
General Instructions :

1. The question paper comprises of two Sections, A and B. You are to attempt both the sections.
2. All questions are compulsory.
3. All questions of Section-A and all questions of Section-B are to be attempted separately.
4. Question numbers 1 to 3 in Section-A are one mark questions. These are to be answered in one word or in one sentence.
5. Question numbers 4 to 6 in Section-A are two marks questions. These are to be answered in about 30 words each.
6. Question numbers 7 to 18 in Section-A are three marks questions. These are to be answered in about 50 words each.
7. Question numbers 19 to 24 in Section-A are five marks questions. These are to be answered in about 70 words each.
8. 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.
9. Question numbers 34 to 36 in Section-B are questions based on practical skills. Each question is of two marks.

SECTION-A

1. Mention the part of the brain which controls the involuntary actions like blood pressure, salivation etc. 1
2. In an electric circuit, it is found that, all its components carry same current but the potential difference across each is different. Identify the type of combination in which these components are joined. 1
3. What is acid rain? 1
4. Write the name of the compound which is : 2
 - (i) used for softening hard water.
 - (ii) used as an antacid.
 - (iii) a component of washing soda.
 - (iv) used as an oxidizing agent in many chemical industries.
5. Which of the following listed metals can displace zinc from its salt solution? Give reason of your answer along with chemical equation. 2
Copper, Lead, Magnesium, Silver.
6. (i) Name any two substances that are selectively re-absorbed as the urine flows along the tube. 2
(ii) Name the part of the excretory system in which urine is stored for some time.
7. What is the basis of the classification of bases into strong and weak? Classify the following into strong base and weak base. 3
 NH_4OH , $\text{Ca}(\text{OH})_2$, NaOH , KOH .
8. (a) When hydrogen gas burns in presence of oxygen, water is formed and when electrolytic reduction of water is done then hydrogen and oxygen gases are formed. State the types of chemical reactions : 3
 - (i) in the first case
 - (ii) in the second case
9. (b) In the experimental set up for electrolysis of water hydrogen and oxygen gases are produced at the cathode and anode respectively. Mention the ratio of the volumes of hydrogen and oxygen gases.
10. What is thermite reaction? Give chemical equation of such a reaction and write two uses of this process. 3
11. (a) Write chemical equations : 3

- 10) when carbon dioxide gas is passed through lime water
 (i) When excess of carbon dioxide gas is passed through lime water
 (ii) Which gas is liberated when a metal reacts with an acid ?
 11 Name the hormone which regulates carbohydrate, protein and fat metabolism in our body. 3
 Which gland secretes this hormone ? Why is it important for us to have iodised salt in our diet ? 3
 12 How does amoeba takes in food, show diagrammatically ? 3
 13 Differentiate between aerobic and anaerobic respiration (give any three differences) 3
 14 A metal wire has diameter of 0.25 mm and electrical resistivity of $3 \times 10^{-8} \Omega \text{ m}$.
 (a) What will be the length of this wire to make a resistance 5Ω ?
 (b) How much will the resistance change if the diameter of the wire is doubled ? 3
 15 Three resistors are connected as shown in the diagram.



- (a) Find the electric current flowing through 20Ω and 30Ω resistors
 (b) Find the total resistance
 (c) Find the potential difference across AC
 16 (a) State and explain Right Hand Thumb rule. 3
 (b) Name the rule which gives direction of force when current carrying conductor is placed in a magnetic field.
 17 Suresh and his friends decided to set up a biogas plant in their village. They formed a committee and collected money for this purpose. Many people were against the coming up of such a biogas plant. Suresh explained to each one of them the importance of biogas plant.
 (i) What could be the advantages as given by Suresh for setting up of the biogas plant ? write any two
 (ii) Name any two substances that can be put in the biogas plant.
 (iii) Suresh should be appreciated for which qualities that are reflected in his action ?
 18 If energy can neither be created nor destroyed, explain with an example as to why we should worry about our energy resources ? 3
 19 (a) Define rancidity. What kind of substances are used to prevent rancidity ? 5
 (b) Balance the following reaction and name the substance oxidised and reduced in it.

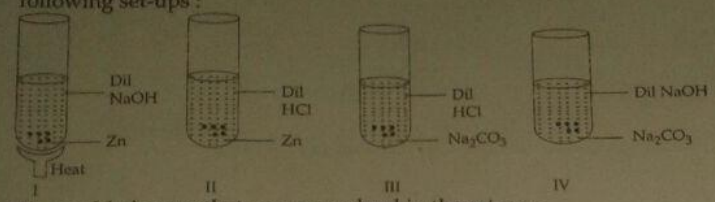
$$\text{Fe}_2\text{O}_3 + \text{Al} \rightarrow \text{Al}_2\text{O}_3 + \text{Fe}$$

 20 Give reasons for the following : 5
 (a) Carbonate and sulphide ores are generally converted into their oxides prior to their reduction.
 (b) Gold and silver are used to make jewellery.
 (c) Hydrogen is not evolved when a metal reacts with nitric acid.
 (d) We should rub baking soda on an ant stung area.
 (e) Sodium should be stored in kerosene oil.
 21 With the help of suitable examples explain the terms phototropism, geotropism and chemotropism. 5
 22 Obtain an expression for the heat produced in a conductor when a voltage V is applied across it. Heating effect of electric current is desirable as well as undesirable. Explain this statement. 5
 23 (a) What is an electromagnet ? What does it consist of ? 5
 (b) With the help of a diagram showing experimental arrangement describe an activity to show how an electromagnet can be made in a school laboratory.
 (c) Compare the pattern of the field produced in case of a current carrying solenoid with the magnetic field of a bar magnet.
 What is meant by the term magnetic field ? Draw the pattern of magnetic field lines due to

25 Rama placed one drop of dilute sodium hydroxide solution on pH paper. The colour of pH paper will be :
 (a) red (b) orange
 (c) green (d) blue

26 A student added red litmus solution to 'A' and observed that it changed into blue. When she added another solution 'B' to 'A' in excess, she observed that the solution turned red. The solutions A and B are :
 (a) NaOH and KCl (b) HCl and NaOH
 (c) NaOH and HCl (d) HCl and H₂CO₃

27 A student performed an experiment by using the chemical substance as shown in the following set-ups :



He would observe that no gas evolved in the set-up :

- (a) I (b) II (c) III (d) IV

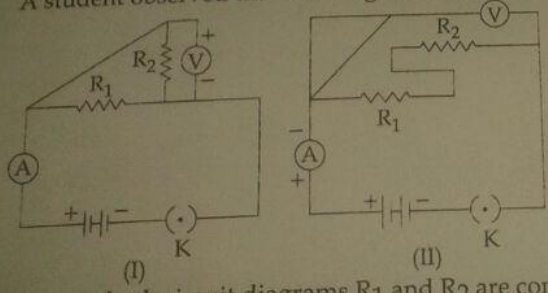
28 Nishi added copper turnings and granulated zinc in two separate test tubes A and B respectively. She poured copper sulphate solution in test tube (B) and ferrous sulphate solution in test tube (A). Correct observations made by her should be :

- (a) test tube A gets black deposits and test tube B gets reddish brown deposits.
 (b) test tube A gets reddish brown deposits and test tube B gets black deposits.
 (c) test tube A gets black deposits, while test tube B gets green deposits.
 (d) test tube A gets no deposits, while test tube B gets reddish brown deposits.

29 When zinc reacts with an aqueous solution of copper sulphate, the observations are :

- (a) Formation of colourless solution; reddish - brown deposits
 (b) Formation of blue solution; reddish - brown deposits
 (c) Formation of green solution; reddish - brown deposits.
 (d) Formation of reddish - brown solution; no deposits.

30 A student observed the following circuit diagrams and concluded that :



- (a) In both circuit diagrams R₁ and R₂ are connect in series.
 (b) In both circuit diagrams R₁ and R₂ are connected in parallel.
 (c) R₁ and R₂ are connected in series in circuit diagram (I) and in parallel in (II)
 (d) R₁ and R₂ are connected in parallel in circuit diagram (I) and in series in (II)

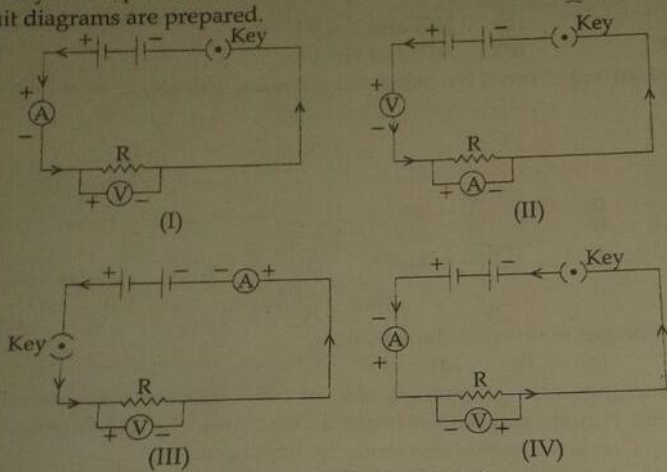
31 To perform the experiment of finding equivalent resistance of a parallel combination of resistances, a student should join voltmeter and ammeter with the combination as :

- (a) both in series with it
 (b) both in parallel with it
 (c) ammeter in parallel and voltmeter in series with it
 (d) ammeter in series and voltmeter in parallel with it.

32 Other than light, what else is necessary for photosynthesis ?



- (a) Carbon dioxide (b) Water
 (c) Oxygen (d) Both (a) and (b)
- 33 In the experiment to show that 'CO₂ is released during respiration', the conditions that should be created for better results are : 1
- (a) seeds should be moist, KOH should be freshly prepared
 (b) seeds should be dry, KOH should be in solution form
 (c) seeds should be covered with Vaseline, KOH should be freshly prepared
 (d) seeds should be wet, KOH should be mixed with HCl solution .
- 34 An iron nail was dipped in the solution of copper sulphate for about 30 minutes. State the change in colour observed. Give the reason for the change. 2
- 35 To study the dependence of Potential difference (V) on current I across Resistor (R), four circuit diagrams are prepared. 2



- (i) Select the circuit diagrams which are correct
 (ii) Give reason for the circuit diagram which are not correct.
- 36 State any two functions of the stomata. 2