Red Rose

10th

N93S5TZ

SUMMATIVE ASSESSMENT – I, 2014

SCIENCE

Class – X

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 **Sections-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 are two **marks** questions.

SECTION-A

1 Mention the respiratory unit of lungs and excretory unit of kidneys. 1

2 Define the potential difference between two points. 1

3 Name the component of a solar cooker that produces a green house effect inside it. 1

4 A white powdery substance having strong smell of chlorine gas is used for disinfe drinking water to make it free from germs. Identify the substance and write its chem

formula. Also write chemical equation for its preparation.

5 List four observations which help us to determine whether a chemical reaction has taken place or not. 2

6 (a) State the function of the following plant hormones : 2

(i) Abscisic acid

(ii) Cytokinin

(b) Define chemotropism

7 Give reasons for the following : 3

(i) Zinc oxide is considered an amphoteric oxide.

(ii) Generally metals are not found in their free state.

(iii) Metals are good conductors of heat.

8 Explain the following statements : 3

(a) Most metal oxides are insoluble in water but some of these dissolve in water. What are these oxides and their solutions in water called ?

(b) At ordinary temperature the surfaces of metals such as magnesium, aluminium and zinc etc. are covered with a thin layer. What is the composition of this layer ? State its importance.

(c) Same alkali metals can be cut with a knife.

9 (a) Given below are the pH values of four different liquids : 3

7.0, 14.0, 4.0, 2.0.

Which of these could be that of :

(i) lemon juice

(ii) distilled water

(iii) sodium hydroxide solution

(iv) tomato juice

(b) When blue litmus solution is added to soda water, what change will be observed and why ?

10 Describe electrolytic refining of copper with chemical equations. Draw a well labelled diagram for it. 3

11 Explain how lungs are designed in human beings to maximize the area for exchange of gases. Why the air passage does not collapse when there is no air in it ? 3

12 (a) Name the organs where receptors are usually located ? 3

(b) State the functions of :

(i) gustatory receptors

(ii) olfactory receptors

(c) Identify the parts of a neuron

(i) Where information is acquired

(ii) Through which information travels

13 State reason for the following : 3

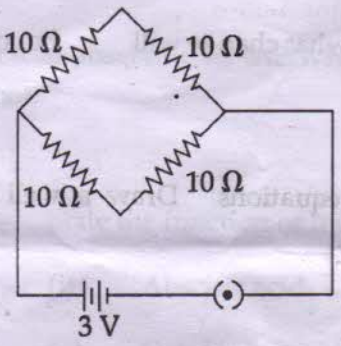
(1) In human heart the walls of the ventricles are thicker than the auricles.

(2) During the breathing cycle even after forceful exhalation the exchange of gases continues.

(3) In green plants during the day carbon dioxide is generated in respiration but is not released out.

14 Can you run an electric geyser with power rating 2 kW; 220V on a 5 A line ? Give reason to justify your answer. 3

15 Find the current drawn from the battery by the network of four resistors shown in the figure. 3



16 Horizontal component of earth's magnetic field at a place is uniform and is direction is south to north. A high current through a horizontal power line flows at this place from west to east. Consider two points A and B at equal distances from the wire, respectively above and below it. Giving reason explain where is the field more - at A or at B. 3

17 Arpit went to his village in Maharashtra when he was told about the setting up of a nuclear power plant near his village. He immediately met the village head and asked him to protest with the authorities to change the venue of the set up. 3

(i) What could be the reason behind such protes ?

(ii) Which other alternative source of energy can be used to improve the energy problem in his area ?

(iii) Arpit was appreciated in the village by everyone for his actions. Dut to which qualities Arpit got appreciation by the villagers ?

18 List any three qualities of an ideal source of energy. 3

19 (a) Explain two ways by which food industries prevent rancidity. 5

(b) Discuss the importance of decomposition reaction in metal industries with three points.

20 Give reasons for the following : 5

(i) Carbon is not used for obtaining aluminium from aluminium oxide.

(ii) Potassium is kept immersed in kerosene oil.

(iii) Metals conduct electricity.

(iv) Tungsten is used for making filaments of incandescent bulbs.

(v) Shining surface of metals is tarnished after sometime.

21 (a) Name one organ each where growth hormone is synthesised in man and plant. 5

(b) List the sequence of events that occur when a plant is exposed to unidirectional light, leading to bending of a growing shoot. Also name the hormone and the type of movement.

22 (a) A coil of insulated copper wire is connected to a galvanometer. With the help of a labelled diagram state what would be seen if a bar magnet with its south pole towards one face of this coil is : 5

(i) moved quickly towards it,

(ii) moved quickly away from it,

(iii) placed near its one face ?

(b) Name the phenomenon involved in the above cases.

(c) State Flemings right hand rule.

23 List two distinguishing features between the resistance and resistivity of a conductor. A wire is stretched so that its length becomes 6/5 times its original length. If its original resistance is 25 ς find its new resistance and resistivity. Give justification for your answer in each case. 5

24 Draw a labelled circuit diagram to verify Ohm's law. List two precautions you would observe while verifying this law in the laboratory. 5

Calculate the current drawn by an electric lamp from a 220 volts supply. If the resistance of the lamp while glowing is 200 ohms.

SECTION - B

25 Vinegar has a pH of : 1

(a) >7 (b) <7 (c) 7 (d) 12

26 A student uses lime water to test the gas evolved as a result of action of dilute HCl on solid sodium carbonate. The chemical compound present in lime water is : 1

(a) calcium chloride (b) calcium sulphate

(c) calcium nitrate (d) calcium hydroxide

27 The colour of the gases produced on thermal decomposition of ferrous sulphate is : 1

(a) Greenish yellow (b) Yellow

(c) Reddish yellow (d) Colourless

28 Anagha had to write the reactivity of Fe, Cu, Zn, Al after performing the displacement reaction experiments in decreasing order of their reactivity. The correct order is – 1

(a) Fe > Zn > Cu > Al (b) Al > Zn > Fe > Cu

(c) Zn > Al > Fe > Cu (d) Al > Fe > Zn > Cu

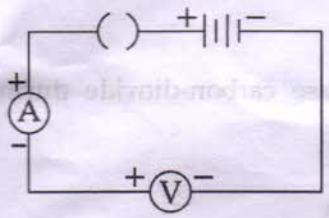
29 Kshama added a few Zn granules to 50mL of a solution of $ZnSO_4$ in a test tube. The correct observation made by her for change in colour of solution is: 1

(a) Blue solution turned colourless

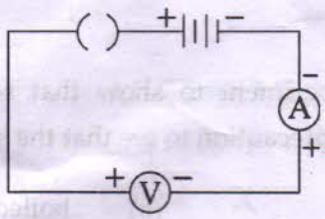
(b) Colourless solution turned blue

(c) Pale green solution turned blue

(d) Colourless solution remained colourless.

30 

(I)



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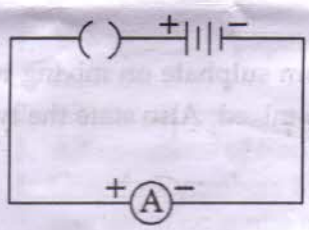
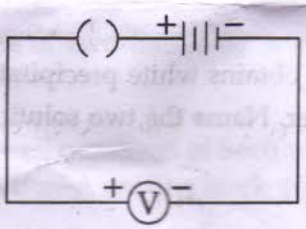


(III)



(IV)

In which of the circuits, the voltmeter/ammeter is likely to be damaged, on plugging the key,

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

31 When two or more resistors are connected in parallel to a battery 1

(a) The Voltage across each resistor is the same

(b) The total current flowing from the battery equals to the sum of the currents flowing through each resistor

(c) The equivalent resistance of the combination is less than the resistance of any one of the resistors

(d) All of the above

32 In submerged water plants (e.g., hydrilla) 1

(a) Light is not needed for photosynthesis

(b) Photosynthesis does not occur

(c) Light is necessary for photosynthesis

(d) Carbon dioxide is not required for photosynthesis

33 1

Before sheetal sets up an experiment to show that seeds release carbon-dioxide during respiration, he should take the precaution to see that the seeds are :

(a) soaked in vinegar (b) boiled to soften

(c) kept moist till they germinate (d) dried completely

34 During an experiment a student obtains white precipitate of barium sulphate on mixing two aqueous solutions with each other. Name the two solutions he has mixed. Also state the type of reaction that has taken place. 2

35 While performing experiment to study the dependence of current on the potential difference a student keeps the circuit closed for a long time to measure the current and potential difference, state how the resistance of the resistor will be affected ? 2

36 Mention any two precautions that should be taken while preparing the temporary mount of leaf peel. 2

$y = x^k$

$y = x^{k+1}$

$y' = (k+1)\, x^k$

$y' = (k+1)\, k!$

$y' = (k+1)!$

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