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HOLY CHILD AUXILIUM, NEW DELHI -110057

**SUMMATIVE ASSESSMENT – I (2016-17)**  
**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. Each question is of **two marks**.

**SECTION-A**

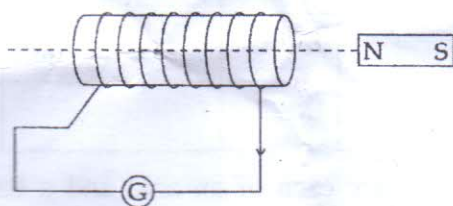
1. Name the pigment which transports oxygen and carbondioxide in human body. 1
2. A charge of 150 coulomb flows through a wire in one minute. Find the electric current flowing through it. 1
3. Name the two main combustible components of biogas. 1

(1)

4. Name one natural source each, of the following acids : 2  
 (i) Citric acid (ii) Oxalic acid  
 (iii) Lactic acid (iv) Tartaric acid
5. Explain the terms : 2  
 (i) Malleability and (ii) Ductility.
6. Draw a labelled diagram of cross section of a leaf. 2
7. Write the chemical name and formula of bleaching powder. How is it prepared? Write the chemical equation and state any two uses of bleaching powder. 3
8. (a) What happens when an aqueous solution of sodium sulphate reacts with an aqueous solution of barium chloride ? State the physical conditions of reactants in which the reaction between them will not take place. Write the balanced chemical equation for the reaction and also mention the type of reaction.  
 (b) What changes in the colour of iron nails and copper sulphate solution do you observe after keeping the iron nails in copper sulphate solution for about half an hour. 3
9. (a) Write the electron-dot structure for calcium and sulphur.  
 (b) Show the formation of CaS by the transfer of electrons.  
 (c) Name the ions present in this compound CaS.  
 (Atomic number of Ca=20, S=16) 3
10. State what happens when : 3  
 (i) Gypsum is heated at 373 K.  
 (ii) Blue Crystals of copper sulphate are heated.  
 (iii) excess of carbon dioxide gas is passed through lime water.
11. Mention the part of the brain which : 3  
 (i) Enables us to ride a bicycle.  
 (ii) Changes the size of the pupil of eye.  
 (iii) Maintains blood pressure of the body.  
 (iv) Maintains posture and equilibrium of the body.

- (v) Regulates respiration.
- (vi) Detects the smell of an agarbatti (incense stick).

12. Name three life processes which are essential for maintaining life and briefly explain the functioning of any one of them. 3
13. State the source of secretion and function of the following hormones : 3
- (i) Thyroxin
  - (ii) Insulin
  - (iii) Growth hormone
14. Show four different ways in which three resistors of  $r$  ohm each may be connected in a circuit. In which case is the equivalent resistance of the combination 3
- (i) maximum
  - (ii) minimum ?
15. What change in the galvanometer needle would you observe when a strong bar magnet is : 3
- (i) kept stationary at a distance from the coil ?
  - (ii) pushed towards the coil ?
  - (iii) pulled away from the coil ? Give reason to justify your answer.



16. State Maxwell's right hand grip rule giving diagram. A straight conductor placed horizontally is carrying current from west to east. What will be the direction of magnetic field lines around it? 3
17. Ramesh is a student of standard X. He organized many activities in his school to convey the students about the various advantages and disadvantages of using renewable and non-renewable sources of energy. Many students of the school took part and concluded about the best choices of energy sources on this basis. 3

Answer the following questions :

- (i) What activities Ramesh might have had assigned for the students?  
 (ii) Name any two renewable sources of energy.  
 (iii) Which two values are reflected in Ramesh's thought and action?

18. Define a fuel. List any two characteristics that you would look for in a good fuel. 3

19. (a) Define corrosion. 5  
 (b) What is corrosion of iron called?  
 (c) How will you recognise the corrosion of silver?  
 (d) Why corrosion of iron is a serious problem?  
 (e) How can we prevent corrosion of iron?

20. Complete the following table : 5

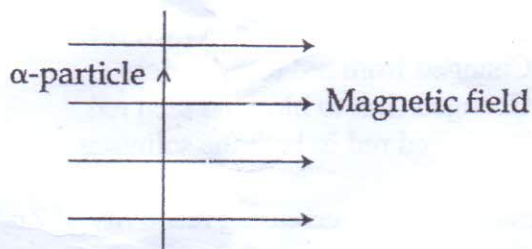
(a)

Sample solution	Red litmus solution	Blue litmus solution	Phenolphthalein solution	Methyl orange solution
Baking soda	-	-	-	-
Hydrochloric acid	-	-	-	Red
Calcium hydroxide	-	-	-	-

- (b) List one more property each of an acid and a base other than mentioned in the table.
21. What are plant hormones? Give four different types of plant hormones and state their functions briefly. 5
22. (a) State the function of 'a fuse' in an electric circuit. How is it connected in the domestic circuit?  
 (b) An electric fuse of rating 3A is connected in a circuit in which an electric iron of power 1.5 kilo watt is connected which operates at 220 V. What would happen? Explain.

5

23. (a) Describe an activity to determine the direction of magnetic field produced by a current carrying straight conductor. Also show that the direction of the magnetic field is reversed on reversing the direction of current.
- (b) An  $\alpha$ -particle, (Which is a positively charged particle) enters, a uniform magnetic field at right angles to it as shown below. Stating the relevant principle explain in which direction will this  $\alpha$ -particle move ?



5

- 24 List two distinguishing features between the resistance and resistivity of a conductor. A wire is stretched so that its length becomes  $\frac{6}{5}$  times of its original length. If its original resistance is  $25\Omega$  find its new resistance and resistivity. Give justification for your answer in each case.

5

### SECTION - B

- 25 A student test the following solutions of same concentration for PH value :

1

- |              |                            |
|--------------|----------------------------|
| (i) dil. HCl | (ii) lemon juice           |
| (iii) water  | (iv) dil. sodium hydroxide |

The solutions which respectively have the lowest and highest pH are :

- |                 |                 |
|-----------------|-----------------|
| (a) (i), (iv)   | (b) (iii), (iv) |
| (c) (ii), (iii) | (d) (i), (ii)   |

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 : 1

- (a) NaOH and KCl (b) HCl and NaOH  
(c) NaOH and HCl (d) HCl and H<sub>2</sub>CO<sub>3</sub>

27/ Ashu dipped red litmus paper first in dil NaOH solution and then in dil HCl. He observed that the colour of the litmus paper : 1

- (a) Changed first to blue and then colourless -  
(b) Changed from red to colourless  
(c) Changed first to blue and then red  
(d) Remained red in both the solutions

28/ The correct order of decreasing reactivity of Zn, Cu, Fe and Al is: 1

- (a) Al > Zn > Fe > Cu (b) Zn > Al > Fe > Cu  
(c) Al > Fe > Zn > Cu (d) Zn > Fe > Al > Cu

29/ Aluminium sulphate and copper sulphate solutions were taken in two test tubes A and B respectively. A little iron filings were added to both the test tubes. Four students Ram, Jeet, Rita and Anita recorded their observations in the form of a table as given below : 1

Name	Aluminium sulphate Solution [A]	Copper sulphate Solution [B]
Ram.	Colourless solution Changes to light green	Blue colour of the solution is retained.
Jeet	Colourless solution changes to light blue	Blue colour of solution changes to green.
Rita.	No change in the colourless solution.	Blue colour of the solution changes to green.
Anita	No change in colourless solution	Blue colour fades away.

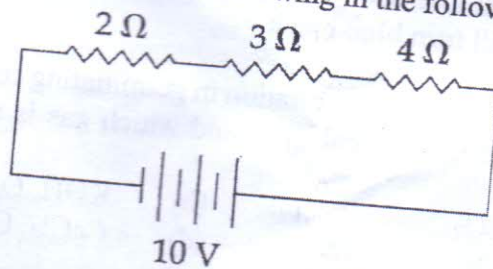
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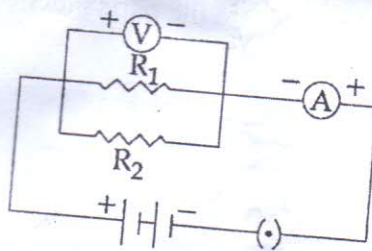
The correct set of observations have been reported by student :

- (a) Jeet (b) Anita  
(c) Rita (d) Ram.

30. The amount of current flowing in the following circuit is : 1



- (a) 1.11 A (b) 5 A  
(c) 3.33 A (d) 2.5 A
31. To calculate the equivalent resistance when  $R_1$  and  $R_2$  are connected in parallel, a student is not able to perform the experiment for given circuit diagram. 1



The correct reason is :

- (a) Position of Voltmeter is not correct.  
(b) Position of Ammeter is not correct.  
(c) Terminals of Voltmeter are not connected correctly.  
(d) Terminals of Ammeter are not connected correctly.

32. Rehana put a potted plant in a dark room 24 hours before the experiment to show that light is necessary for photosynthesis. The effect on the leaves of the plant will be that : 1

- (a) leaves will be de-starched.
- (b) leaves will turn black.
- (c) leaves will lose chlorophyll.
- (d) leaves will turn blue-black.

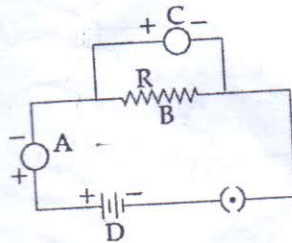
33. In the experiment to show respiration in germinating seeds, which chemical is used in the small tube and which gas is released by seeds : 1

- (a) KOH, CO<sub>2</sub>
- (b) KOH, O<sub>2</sub>
- (c) KCl, CO<sub>2</sub>
- (d) CaCl<sub>2</sub>, CO<sub>2</sub>

34. When ferrous sulphate crystals are heated strongly in a dry boiling tube, two gases are evolved. 2

- (i) Which amongst the two gases has a pungent and choking smell that causes coughing ?
- (ii) What type of reaction is this ?

35. A student draws the following circuit diagrams for the experiment on studying the dependence of current (I) on potential difference (V) across a resistor. Name the parts labelled as A, B, C and D in the diagram. 2



36. Identify the observed various parts of temporary mount of well stained leaf peel, when focussed under the high power of a microscope. 2

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