

BVN
(DAKSH)

Name DT Class & Section X Roll No. 7

SUMMATIVE ASSESSMENT – I (2015-2016)

Class-X
Subject-Science

Time Allowed : 3 Hrs.

M.M. : 90

Please check the total marks

Do not write any answer on the question paper.

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.
- 10) Attempt the following questions in separate answer sheets:-
Physics :- 2,3,14,15,16,18,22,23,24,30,31,35
Chemistry :- 4,5,7,8,9,10,19,20,25,26,27,28,29,34
Biology :- 1,6,11,12,13,17,21,32,33,36
- 11) Tie the answer sheets together in the order of physics , chemistry ,biology while submitting

SECTION-A

- 1 Name the hormone secreted by thyroid gland and state its one function. 1
- 2 What is meant by magnetic field? 1
- 3 State two steps in the process of generation of electricity from a windmill. 1

4

Consider the following salts :

 Na_2CO_3 , NaCl , NH_4Cl , CH_3COONa . Which of these salts will give

- (i) Acidic solution
 (ii) Neutral solution and
 (iii) Basic solution ?

5

On heating copper powder in air the surface of copper powder becomes coated with black CuO . How can this black coating be converted into brown copper ? Write chemical equation for the reaction that occurs during the colour change.

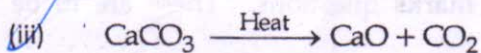
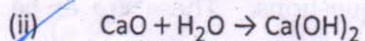
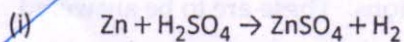
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Give reason :

- (i) The two ventricles have thicker muscular walls than the two atria in human heart.
 (ii) The capillaries have walls which are one-cell thick.

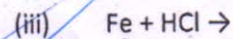
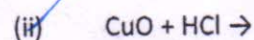
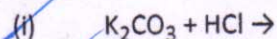
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Identify the type of reactions in each of the following reactions :



8

Complete and balance the following chemical equations :



Remember writing
 Names

9

Give one most suitable word for the following statements :

- (i) Metal oxides which show basic as well as acidic behavior.
 (ii) Some metals produce a sound on striking a hard surface.
 (iii) Iodine, a non-metal is shining.

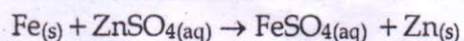
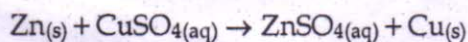
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Write balanced chemical equation for the following reactions and also name the type of chemical reaction in each case.

(a) Magnesium ribbon is burnt in air.

(b) Lime stone is heated.

- B 11 Write four components necessary for autotrophic nutrition. Mention its by product. 3
- B 12 A young green plant receives sunlight from one direction only. What will happen to its shoots and roots and why? 3
- B 13 (a) Explain why do multicellular organisms need a transportation system for carrying food and oxygen? 3
(b) Why does an organism require excretory system?
- P 14 A copper wire has cross-sectional area $4 \times 10^{-6} \text{ m}^2$ and resistivity of $1.6 \times 10^{-8} \text{ ohm metre}$. Calculate the length of the wire to make its resistance 10 ohms. How much does the resistance change, if the diameter is doubled? 3
- P 15 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. 3
- P 16 In an electric field the work done in bringing a 2 coulomb charge from infinity to a point A is 10 joules and in bringing the same charge to some another point B is 20 joules. Find the potential difference between two points A and B. What would be the work done if the same charge is brought directly from A to B? 3
- B 17 Harsh, Nikhil and Neha come to school by their respective cars though they lived within a distance of 2 km from the school. On the other hand Raghu, their friend, came by bicycle from the same distance. He persuaded his friends to stop coming by car and use cycle instead. His friends were convinced and they also started coming by bicycle. 3
(a) List the values exhibited by Raghu.
(b) Explain how he must have convinced his friends to adopt same values that they accepted his proposal.
- P 18 List any three advantages of using solar cells. 3
- C 19 (a) An ore, on heating in air, gives sulphur dioxide gas. Name the method in each metallurgical step, that will be required to extract this metal from its ore. 5
(b) State which of the following reactions will take place or not, giving suitable reason for each.



20 (a) The pH values of six solutions A, B, C, D, E and F are 0, 11, 6, 7, 13 and 8 respectively. 5
C. Which of these solutions is

(i) Weak acid

(ii) Weak base

(iii) Strong acid

(iv) Strong base

(v) Neutral.

* Arrange the solutions A, B, C, D, E and F in decreasing order of hydrogen ion concentration.

(b) Two solutions X and Y are tested with universal indicator.

Solution X turns orange whereas solution Y turns red. Which of these solutions is a stronger acid ?

(c) The pH of a cold drink is 5. What will be its action on blue and red litmus solutions ?

21 (a) State the need of control and coordination system in multicellular higher organisms. 5

B (b) How does chemical coordination take place in animals ?

(c) How is information transferred when movement is fast to a stimulus ? What are the limitations to the use of electrical impulses as the means for transferring information of a stimulus in the body.

(d) Plants do not have nervous system like Animals. In the absence of nervous system, how does control and coordination take place in plants.

22 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.

23 (a) Name two safety measures commonly used in an electric circuit and appliances. 5

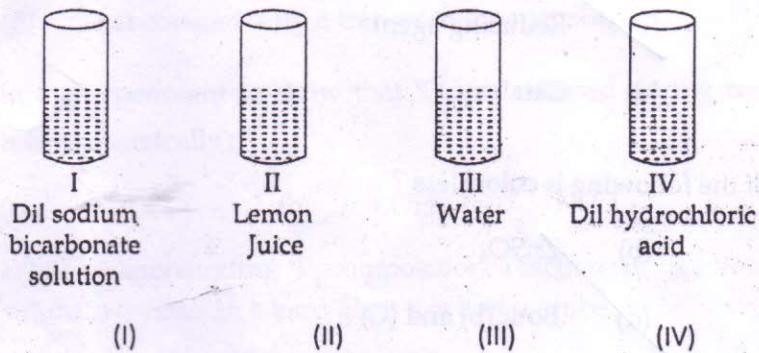
(b) What precaution should be taken to avoid the overloading of domestic electric circuits ?

24 Establish a relation for the equivalent resistance of three resistors connected in series. 5

Calculate the equivalent resistance of the combination of three resistors of $12\ \Omega$, $6\ \Omega$ and $4\ \Omega$ joined in parallel.

SECTION - B

- 25 A student was provided with four samples of solutions as shown in figures (I), (II), (III) and (IV). He determined pH value of each solution by using pH paper. The correct sequence of colour change of pH paper observed by the student will be :

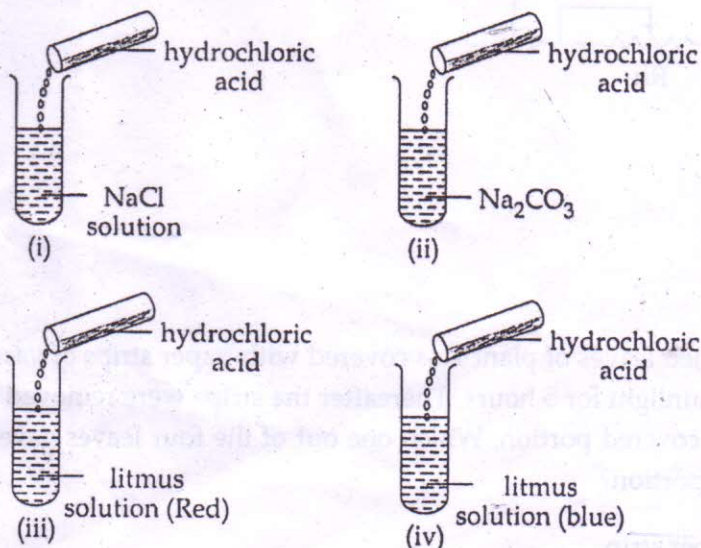


- (a) indigo light red green red
 (b) red indigo green light red
 (c) indigo red green yellow
 (d) green red yellow indigo

- 26 You are given solutions A and B whose pH values are 6 and 8 respectively. What do you infer from this information?

- (a) Strength of solution B is higher than A
 (b) A is an acid while B is a base.
 (c) Both are acid solutions.
 (d) Both are base solutions.

- 27 In figures given below, in which test tube, a gas will be released with effervescence?



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

28 A chemistry lab-incharge kept Zn metal in FeSO_4 solution, and observed that after some time green FeSO_4 solution turns to colourless and some brown powder was deposited on zinc. In the above reaction, Zn metal acted as :

- (a) Oxidising agent (b) Reducing agent
(c) Dehydrating agent (d) Catalyst

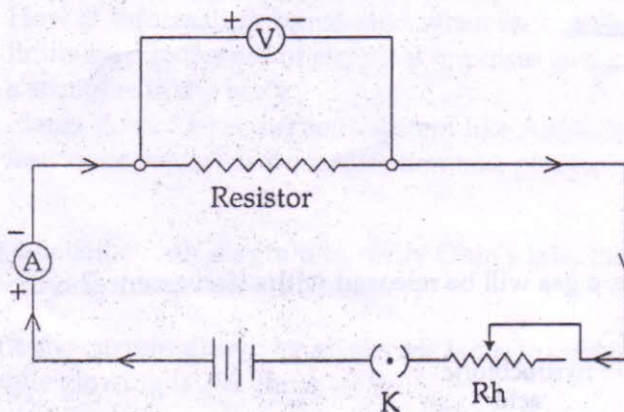
29 Aqueous solution of which of the following is colourless ?

- (a) FeSO_4 (b) ZnSO_4
(c) $\text{Al}_2(\text{SO}_4)_3$ (d) Both (b) and (C)

30 A wire of resistance R_1 is cut into 5 equal parts. These 5 pieces are then connected in series. If the equivalent resistance of this combination be R_2 . Then the ratio $\frac{R_1}{R_2}$ is :

- (a) 2.5 (b) 1 (c) 5 (d) $\frac{1}{5}$

31 Which of the two circuit components are connected in parallel in the following circuit diagram shown in figure given below ?



- (a) Rheostat and voltmeter
(b) Voltmeter and ammeter
(c) Voltmeter and resistor
(d) Ammeter and resistor

32 A portion of each of four de-starched leaves of plant was covered with paper strips of various colors. The plant was exposed to sunlight for 5 hours. Thereafter the strips were removed and the leaves tested for starch in the covered portion. Which one out of the four leaves gave the positive starch test in the covered portion?

- (a) That covered with black paper strip

- (b) That covered with green paper strip
- (c) That covered with white paper strip
- (d) That covered with a transparent paper strip

33 In the experiment to show that 'CO₂ is released during respiration', the solution in the test tube is chemically : 1

- (a) NaOH (b) KOH (c) NaCl (d) KCl

34 While demonstrating decomposition reaction in laboratory the teacher heated ferrous sulphate crystals in a hard glass dry boiling tube. 2

- (i) What change in the colour of ferrous sulphate crystals you will observe ?
- (ii) What type of smell of the gases coming out of the boiling tube would you feel ?

35 State four factors that affect resistance. 2

36 Draw a well labelled diagram of stomatal apparatus showing open stomata. 2