

SUMMATIVE ASSESSMENT - I, 2016-17, SCIENCE Class — X (Code: PX550IM) Question Paper - 4

SECTION - A

1. Mention the site of complete digestion of carbohydrates, proteins and fats in humans.
2. How is the type of current that we receive in domestic circuit different from the one that runs a clock ?
3. What are hot spots inside earth's crust ?
4. Translate the following reactions into balanced chemical equations :
 - (i) Manganese dioxide is heated with aluminium powder.
 - (ii) Iron is treated with steam.
5. Consider the following salts : Na_2CO_3 , NaCl , CH_3COONa . Which of these salts will give (i) acidic solution (ii) Neutral solution and (iii) Basic solution ?
6. How does Auxins promote phototropism?
7. Identify the type of reactions
 - (i) $\text{Zn} + \text{H}_2\text{SO}_4 \rightarrow \text{ZnSO}_4 + \text{H}_2$
 - (ii) $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2$
 - (iii) $\text{CaCO}_3 \xrightarrow{\text{Heat}} \text{CaO} + \text{CO}_2$
8. You are provided with three test tubes A, B and C which contain distilled water, acidic solution and basic solution respectively. If you are given blue litmus paper only how will you identify the contents of each test tube ?
9. (a) Write any two properties of ionic compounds.
(b) Show the formation of aluminium chloride by the transfer of electrons between the atoms. (Atomic number of aluminium and chlorine are 13 and 17 respectively.)
10. (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.

11. As the blood sugar level in our body falls insulin secretion is reduced".

Justify this statement in the reference of feedback mechanism that regulates the timing and amount of hormone released.

12. Name two hormones secreted by pancreas. Write one function of each.

13. Draw a flow chart to show the breakdown of glucose by various pathways.

14. Find the current drawn from the battery by the network of four resistors shown in the figure. ?

15. What is an electromagnet ? Draw a circuit diagram to show how a soft iron can be changed into an electromagnet by a solenoid. Identify the region in the solenoid where field is uniform.

16. What is meant by electric current? Write its SI unit. Calculate the amount of charge that flows through a conductor when a current of 5 amperes flows through it for 2 minutes.

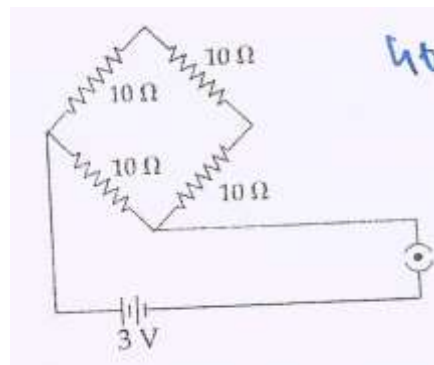
17. Reena's father works with a company that builds dams. Once he took her to the site where a dam was being built. Reena saw a group of people sitting there and shouting slogans against the building of darn. She talked to the group of people and asked them about their problems and then discussed it with her father. She, then tried to convince the people to talk with the authorities and come to an amicable solution. The discussion was successful. Reena's father was very proud of his daughter. Now answer the following questions: (i) Why was Reena's father proud of his daughter ? (ii) Why was the group of people protesting against the building of darn ? (iii) Reena's contribution to the peaceful resolution of the conflict proved a boon for many citizens of the country. How ?

18. Define the process of nuclear fission, Write the steps involved in generating electricity in a nuclear reactor.

19. (a) An ore on treatment with dilute hydrochloric acid produces brisk effervescence. What type of ore is this ? What steps will be required to obtain metal from the enriched ore ?

(b) A Copper coin is kept immersed in silver nitrate solution for some time. What change will take place in the coin and colour of the solution ? Write the chemical equation for reaction involved.

20. State the changes you observe when : (a) Lead nitrate powder is heated in a dry boiling tube,



(b) Ferrous sulphate crystals are heated in a dry boiling tube. Write balanced chemical equations in each case.

Name the category of reactions in which you would place these reactions stating reason.

21. Draw a labelled diagram of human brain and mention the functions of the following : Medulla, cerebellum and forebrain,

22. (a) What is meant by heating effect of electric current? Give two applications of heating effect of current,

(b) Explain why, tungsten is used for making the filaments of electric bulbs.

(c) 50 J of heat is produced each second in a $2\ \Omega$ resistor.

23. Find the potential difference across the resistor.

(a) Define electromagnetic induction and state the law that helps in determining the direction of induced current. (b)

Mention three ways to increase the magnitude of the induced current in a coil,

24. Describe an activity with labelled diagram to show that a force acts on current carrying conductor placed in a magnetic field and its direction changes with direction of current through conductor. Name the rule which determines the direction of this force,

SECTION B

25. Rehrnani mixed one drop of universal indicator with one drop of a given solution and found that a red colour is produced, pH of the solution would be in the range of : (a) 0 - 3 (b) 4 - 6 (c) 6 - 8 (d) 8-10

26. The first colour on the colour chart of pH strip from the top is: (a) Red (b) Orange (c) Blue (d) Yellow

27. Four students I, II, III and IV studied the chemical reactions of dil HCl and NaOH with zinc and sodium carbonate (Na_2CO_3). They wrote the gas evolved if any in the boxes given, as shown below

	HCl	NaOH		HCl	NaOH
Zn	H ₂	No reaction	Zn	H ₂	H ₂
Na ₂ CO ₃	No reaction	CO ₂	Na ₂ CO ₃	No reaction	CO ₂
		I			II
	HCl	NaOH		HCl	NaOH
Zn	No reaction	H ₂	Zn	H ₂	H ₂

Na_2CO_3 CO_2 No reaction Na_2CO_3 CO_2 No reaction

III

IV

The right set of observation is that of student : (a) I (b) II (c) III (d) IV

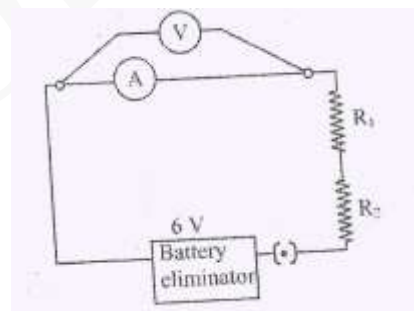
28. Aqueous solution of which of the following is colourless

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

29. Disha took two iron nails and put them in aluminium sulphate solution. After sometimes she observed that :

- (a) the solution becomes warm (b) grey-metal is deposited on the iron nail
 (c) the colourless solution changes to light green
 (d) solution remains colourless and no deposition is observed on the iron nail

30. In an experiments to find the equivalent resistance of a series combination of two resistors R_1 and R_2 : a student uses the circuit shown



The circuit will give

- (a) Correct reading for voltage V but incorrect reading for current I
 (b) Correct reading for current I but incorrect reading for voltage V
 (c) Correct reading for both current I and voltage V
 (d) Incorrect reading for both current I and voltage V

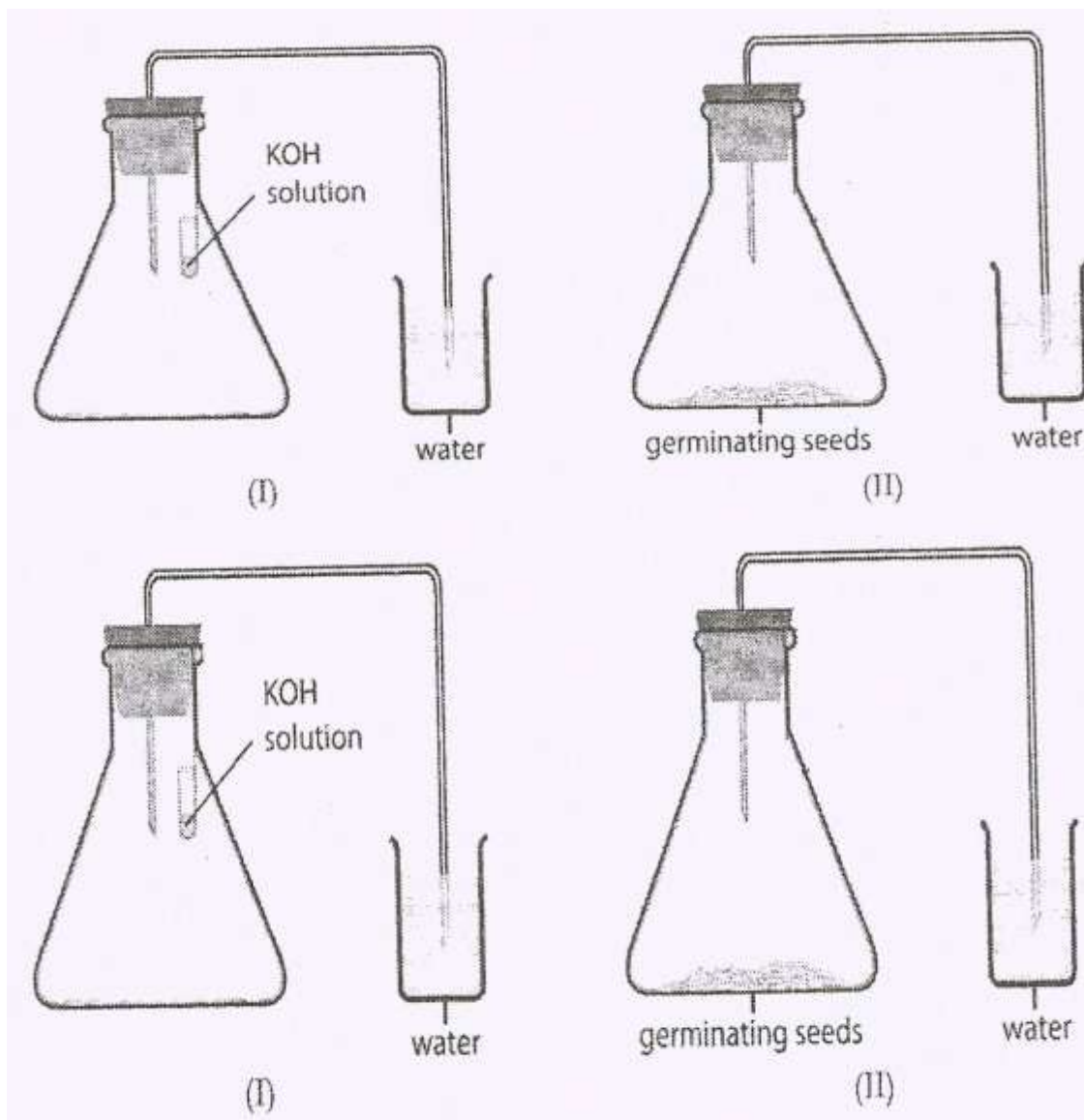
31. To perform the experiment of finding equivalent resistance of a parallel combination of resistances, a student should join voltmeter and ammeter with the combination as :

- (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. In the experiment to show that 'light is necessary for photosynthesis', the reason for boiling the leaf in alcohol is to:

- (I) Kill its cells and make it soft (II) Bleach it so that it stops photosynthesizing
 (III) Remove chlorophyll as it interferes with the iodine test (IV) Activate chlorophyll

33. Choose the correct set-up to demonstrate that CO₂ is given out during respiration' :



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

34. A student obtains a white precipitate on mixing two different salt solutions in a beaker. What could these two solutions be? Identify and name the type of this reaction.

35. Draw a labelled circuit diagram to study the dependence of current (I) on the potential difference (V) across a resistor.

36. Name the components which you will observe when you focus the stomata slide under high power objective of a microscope.