DELHI PUBLIC SCHOOL, CHANDIGARH

Summative Assessment-I (2014-15)

Sample Paper

Class-X
SCIENCE

TIME : 3 ½ Hrs **Maximum Marks : 90**

Instructions:

i) The question paper comprises of two sections, A and B. You are to attempt both the sections.
ii) All questions are compulsory.
iii) There is no overall choice. However, internal choice has been provided in all the three questions of five marks category. Only one option in such questions is to be attempted.
iv) All questions of section A and all questions of section B are to be attempted separately.
v) Questions 1 to 3 in section A are one mark questions. These are to be answered in one word or one sentence.
vi) Questions 4 to 6 in section A are two marks questions. These are to be answered in about 30 words each.
vii) Questions 7 to 18 in section A are three marks questions. These are to be answered in about 50 words each.
viii) Questions 19 to 24 in section A are five marks questions. These are to be answered in about 70 words each.
ix) Questions 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. Questions 34 to 36 in section B are two mark question.

Section A

1. What are biocatalysts?
2. Name any one metal which is found in its free state in nature.
3. Suggest any two reasons which make the large scale usage of nuclear energy prohibitive.
4. Name the type of the reaction and product formed when magnesium reacts with air or oxygen.
5. a) Name the gland which releases thyroxin.
   b) State the function of thyroxin.
6. State two differences between artery and vein on the basis of
   a) type of blood it carries b) valves
7. Differentiate between renewable and non-renewable sources of energy with one example for each.
8. Resistances of three resistors are given as $R_1=20\Omega$, $R_2 = 40\Omega$ and $R_3 = 60\Omega$. Calculate the effective resistance when they are connected in series. Also calculate the current flowing when the combination is connected to a 6V battery.

9. A student while studying the force experienced by a current carrying conductor in a magnetic field records the following observations

   (i) The force experienced by the conductor increases as the current is increased

   (ii) The force experienced by the conductor decreases as the strength of the magnetic field is increased.

   Which of the two observations is correct and why ?

10. What is an electromagnet ? How is it different from a permanent magnet ? State two uses of electromagnet.

11. List (i) any three advantages and (ii) any three limitations of using a solar cooker.

12. Write commercial and SI units of energy. Calculate the cost electric energy consumed by a electric heater rated with 50W used for 2hours daily in the month of April. The cost of one unit of electric energy is Rs 5.

13. What is corrosion? Why Aluminium sheets do not corrode easily? Write two necessary conditions for corrosion to take place.

14. Why should curd not be kept in copper or brass vessels? What is done to protect it?

15. (a) What is an acid ? Give an example.

    (b) Why do acids like HCl conduct electricity in aqueous solutions while solutions of compounds like alcohol and glucose do not?

16. Suppose you have to extract metal M from its enriched carbonate ore. If M is in the middle of the reactivity series . Write various steps used in the extraction of this metal. Also give balanced chemical equations.

17. Write chemical equations for the reactions taking place when

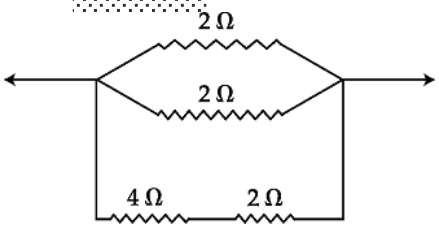
    (a) ZnO is heated with coke (C)

    (b) Zinc carbonate is calcined.

    (c) Zinc sulphide is roasted

18. Mention the two main components of the transport system in plants. State one specific function of each one of these components.

19. (a) Calculate the Equivalent Resistance of the following combination of resistors



    (b) An electric bulb draws a current of 0.8A from 250 V mains. The bulb is used on an average 10 hours a day. If energy costs Rs 3 per kWh, calculate the monthly bill for 30 days.

20. Why can't two magnetic field lines cross each other? Draw the magnetic field lines (including field directions) of the magnetic field due to a long straight solenoid. What important property of this field is indicated by this field line pattern? Name any two factors on which the magnitude of the magnetic field due to this solenoid depends.

21. (a) Write the electron dot structure for calcium and oxygen. The atomic numbers of calcium and oxygen are 20 and 8 respectively.

    (b) Show the formation of calcium oxide by the transfer of electrons.

    (c) Ionic compounds are high melting solids. Give reason.

22. (a) Why does medium become acidic in mouth?

(b) What is the ill effect of acidic medium?

(c) How can this be prevented?

23. (a) Draw a labelled diagram of excretory system in human beings and label the following:

(i) left kidney

(ii) renal artery

(iii) urinary bladder

(iv) urethra

(b) Name the functional unit of kidney.

(c) Name two nitrogenous wastes released from kidney.

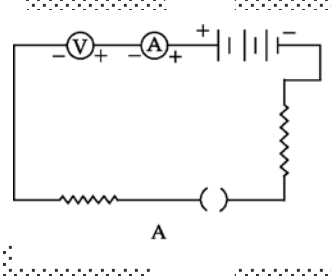
24. (a) State the functions of mid brain and hind brain respectively.

(b) How is the brain and spinal cord protected?

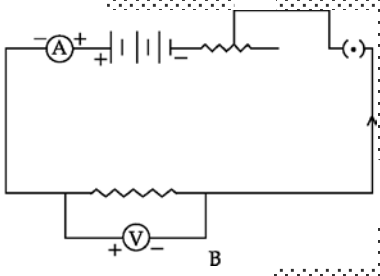
(c) Why do tendrils coil around a support?

Section-B

25. Which of the following experimental set up is correct for verification of Ohm"s law ?



A

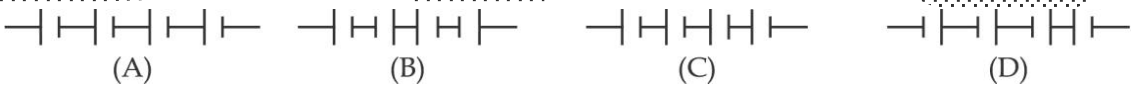


B

(a) A (b) B

(c) both A and B (d) Neither A nor B 32.

26. A student has to connect 4 cells of 1.5 V each to form a battery of 6V.



(A) (B) (C) (D)

The correct way of connecting these cells is shown in figure :

(a) A (b) B

(c) C (d) D

27. A voltmeter has a least count of 0.05 volt. While doing Ohm's law experiment, a student observed that the pointer of the voltmeter coincides with 15th division. The observed reading is :

(a) 0.75V (b) 0.075V

(c) 7.5V (d) 75V

28. When a coiled wire of iron is placed in copper sulphate solution, the reddish-brown substance formed is

(a) soft and dull (b) hard and flaky

(c) smooth and shinning (d) rough and granular

29. Ferrous sulphate crystals on heating strongly in a test tube give a suffocating gas. This gas turns acidified potassium dichromate paper green. The gas evolved is

(a) sulphur dioxide (b) hydrogen sulphide

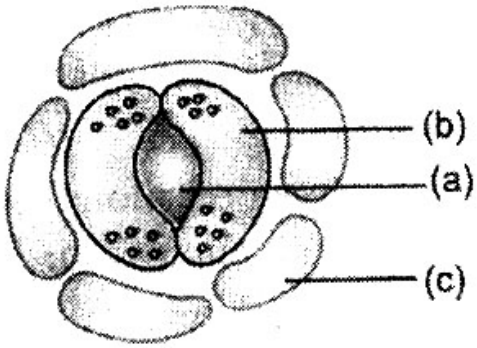
(c) chlorine (d) oxygen

30. When small quantity of iron filings are placed in a solution of copper sulphate a reddish brown solid substance (A) is separated and the solution turns light green (B) The substances A and B are

(a) copper, sulphuric acid (b) copper, iron sulphate

(c) iron sulphate, copper sulphate (d) copper, copper sulphate

31. Which of the following cells possess well defined nucleus ?

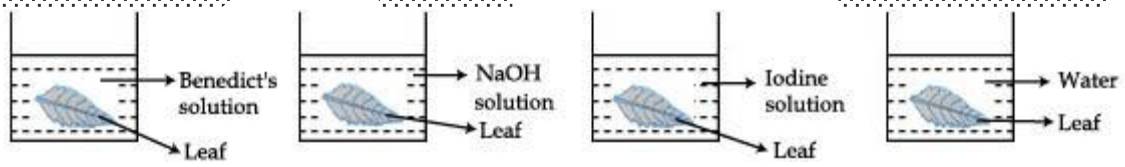


(a) (a) and (b) (b) (a) and (c)

(c) (c) and (b) (d) (a), (b) and (c)

32. Figures A, B, C and D show leaves that have been boiled in alcohol, placed in four beakers containing liquids as labelled.

In which one of the above a positive test for presence of starch would be obtained ?



A B C D

(a) A (b) B (c) C (d) D

33. A student sets up the apparatus for the experiment to show that CO2 is released during respiration. After 2 hours, he would observe that :

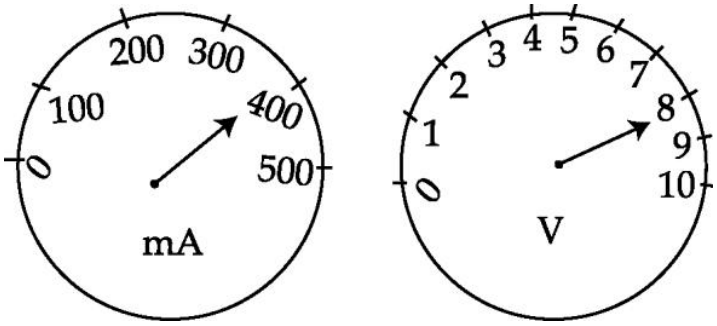
(a) KOH turns milky.

(b) water level rises in the bent tube in the beaker.

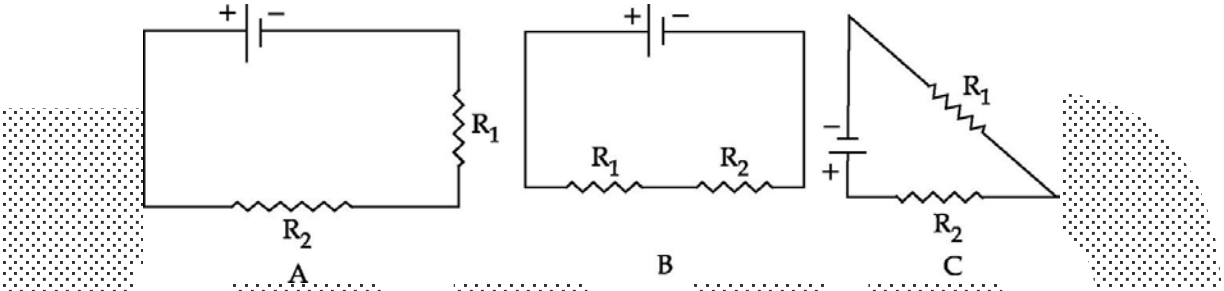
(c) water level decreased in the bent tube in the beaker.

(d) water turns turbid in the beaker.

34. The readings of current flowing through a conductor and the potential difference across its two ends are shown in the ammeter and voltmeter given below. What will be the value of resistance in it?



35. Two resistances R1=10 ohm and R2 =10 ohm are to be connected with 20V battery. Out of which of the following maximum current will flow. Calculate its magnitude.



36. Match the important chemical given in column (A) with the chemical formulae given in column (B)

	Column (A)		Column (B)
(a)	Plaster of Paris	(i)	$Ca(OH)_2$
(b)	Gypsum	(ii)	$CaSO_4.1/2\ H_2O$
(c)	Bleaching powder	(iii)	$CaSO_4.2\ H_2O$
(d)	Slaked lime	(iv)	$CaOCl_2$