

THE MOTHER'S INTERNATIONAL SCHOOL
HALF YEARLY EXAMINATION 2017-2018
CLASS - X
SUBJECT: SCIENCE

TIME: 3 HOURS

M.M:80

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 question of section B are to be attempted separately.
4. Q1 and 2 in section-A are of one mark each. These are to be answered in one word or in one sentence.
5. Q3 to 6 in section A are of two mark each. These are to be answered in about 30 words each.
6. Q 7 to 15 in section A are of three mark each. These are to be answered in about 50 words each.
7. Q 16 to 21 in section A are of five mark each. These are to be answered in about 70 words each.
8. Q 22 to 27 in section B are questions based on practical skills. Each question is of two marks.

Section- A

- Q1. Comment on the correctness of the following statement: 'Thyroxine is responsible for regulating' (1)
- Q2. a) What does the presence of Coliform-bacteria in water indicate? (1)
 b) What does watershed-management emphasize upon?
- Q3. a) Complete the following equations: (2)
- i) $\text{Pb(s)} + \text{CuCl}_2(\text{aq}) \longrightarrow$
- ii) $\text{CuO(s)} + \text{H}_2 \xrightarrow{\Delta}$
- Q4. a) How is chemotropism important for the process of fertilization in plants? (2)
 b) A patient is not able to balance his body and cannot walk properly. Name the part of the brain and the specific region in it that is responsible for his gait.
- Q5. When does a current carrying conductor kept in magnetic field experience force? List the factors on which direction of force depends. (2)
- Q6. a) How is the ozone formed in the upper atmosphere? (2) 3
 b) Why is the damage of ozone-layer a cause from concern for us?
 c) Suggest any two steps to limit this damage.
- Q7. What are the different ways in which glucose is oxidised to produce energy in various organisms. Explain. (3)

Q8. How do various stakeholders influence the conservation of forests? Explain the role of any three. (3)

Q9. a) What are fossil-fuels? How are they formed? (3)

b) Why is there a need to use our resources judiciously? (Give 2 points)

Q10. (a) Write a complete chemical equation involved in the heating of ferrous sulphate crystals? (2 + 1 = 3)

(b) Account for the following, giving equation: white silver chloride turns grey in sunlight.

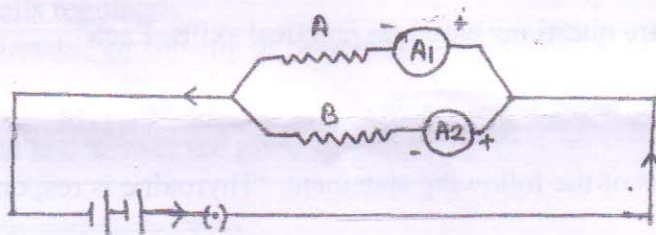
Q11. a) A student dropped a few pieces of marble in dilute Hydrochloric acid, contained in a test tube, the evolved gas was then passed for a long time through lime water. what changes would be observed in lime water? (2 + 1 = 3)

b) 'Sweet Tooth' may lead to tooth decay. Explain.

Q12. (a) What is concentration of an ore? (1 + 2 = 3)

(b) Differentiate between Roasting and Calcination, giving equations.

Q13. (i) In the given circuit, resistors A and B are made of the same metal and are of the same length but A is thicker than B. Which of the two ammeter's will show a higher reading? Justify your answer. (2 + 1 = 3)



(ii) Define resistivity.

Q14. a) Out of two elements A and B with atomic mass 2 and 235 respectively. Which one is suitable for making. (1/2 + 1/2 + 1/2 + 1/2 + 1)

(i) nuclear reactor

(ii) a hydrogen bomb

b) Name the type of nuclear reaction involved in each case

c) Write one difference between the two types of nuclear reactions.

Q15. What should be the position of the object, when a concave mirror is to be used. (3)

(i) as a shaving mirror

(ii) in torches producing a parallel beam of light.

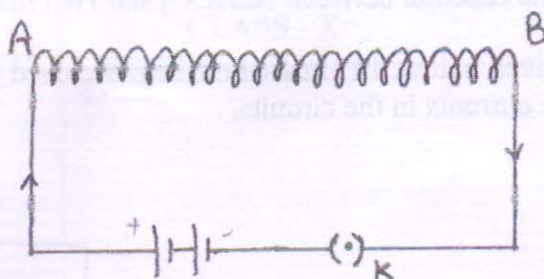
Also draw the ray diagrams in each case.

Q16. a) Derive an expression for the heat produced by electric current and state Joule's law. (3 + 2)

b) Two identical resistors, each of resistance 10Ω are connected in (i) series (ii) parallel to a 6V battery. Calculate the ratio of power consumed in the combination of resistors in two cases. Also draw the circuit diagrams of the two cases.

P.T.O

Q17. Observe the figure given below and answer the following questions. (5)



- Write the special name given to the coil AB which has many circular turns of insulated copper wire.
- State the nature of magnetic field inside AB when a current is passed through it.
- Redraw the diagram and sketch the pattern of magnetic field lines through and around AB.
- List two factors on which the strength of the magnetic field, produced by AB, depends.
- What is the effect of placing an iron core in the coil AB?

Q18. (a) Differentiate between Pepsin and Lipase on the basis of the organs where they are produced and their associated function. (5)

(b) Draw a neat and well labelled diagram of the Human Digestive system.

Q19. (a) What problems are likely to arise if the receptors in our body do not function properly? (5)

(b) Name the hormone and the endocrine gland associated with each of the following:-

(i) Goitre

(ii) Dwarfism

(iii) Diabetes

Q20. a) Give one equation of a combination reaction: (1+2+1+1=5)

b) Write the chemical formula for bleaching powder? How is bleaching powder prepared? For what purpose is it used in paper factories?

c) Define pH

d) Complete the equation: $Zn(s) + NaOH(aq) \longrightarrow$

Q21. a) Why do we make alloys? State any one ~~two~~ reason. (1+2+1+1=5)

b) A metal 'A' which is used in thermite process, when heated with oxygen gives an oxide 'B', which is amphoteric in nature. Identify 'A' and 'B'. Write down reaction of oxide B with hydrochloric acid.

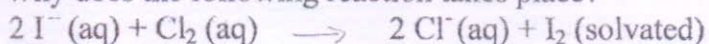
(c) Why is sodium kept immersed in Kerosene oil?

(d) Give equation : a copper plate is dipped in silver nitrate solution.

SECTION - B

Q22. a) On opening the soda water bottle the dissolved CO_2 gas comes out, would the pH of the solution increase or decrease as the gas comes out? Explain your answer. (1 + 1 = 2)

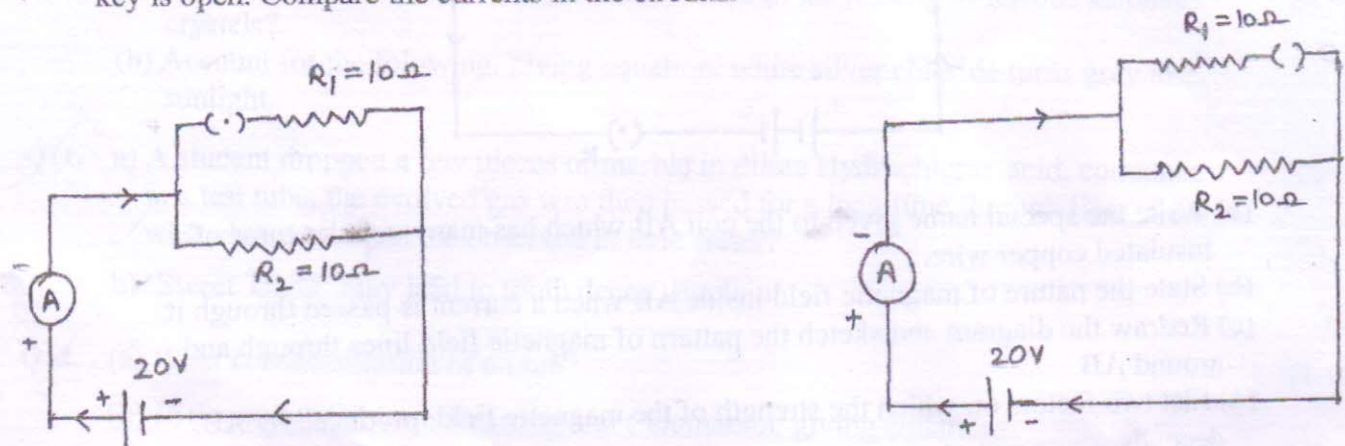
b) Why does the following reaction take place?



P.T.O

- Q23. a) How can the deposits of carbonates and hydrogen carbonates, on the metal surface be cleaned?
 b) What is the utility of the reaction between NaHCO_3 and HCl in daily life situation? (1 + 1 = 2)

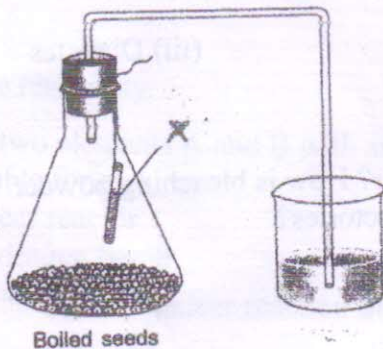
- Q24. Two circuits I & II are given below. In circuit I the key is closed and in circuit II the key is open. Compare the currents in the circuits. (2)



- Q25. a) In a voltmeter there are 19 divisions between the 0 mark and 0.5 V mark. Calculate the least count of voltmeter. When connected in circuit, pointer points at 15th division. What is the reading of the voltmeter. (2)

- Q26. How do guard cells regulate:
 a) Opening of stomata b) Closing of Stomata? (2)

- Q27. Observe the given experimental set-up showing that carbon-dioxide is given out during respiration and answer the given question: (2)



- i) What is 'X' ?
 ii) Why does the water level in the bent-tube rise ?

*****The End*****