DEVAMATHA CMI PUBLIC SCHOOL
MID - TERM EXAMINATION 2017 – 2018
SCIENCE (086)

STD: X

Marks: 80

Time: 3 h

PART A - PHYSICS

I. Answer the following questions in one or two sentences each: (1 × 1 = 1)

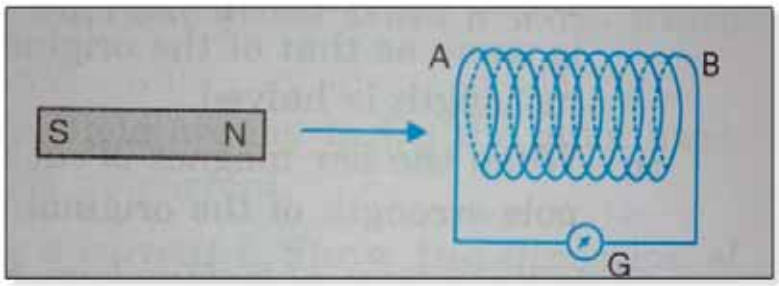
1. Name any two exhaustible source of energy.

II. Answer the following questions in two or three sentences each: (2 × 3 = 6)

2. Differentiate between AC and DC. Write any two advantages of AC over DC.
3. List any four factors that should be taken into consideration in the choice of a good source of energy.
4. Fuse wires of 3A, 5A and 10A are available. Calculate and select the fuse for operating an electric iron of 1kW power at 220 V.

III. Answer the following questions in three or four sentences each: (3 × 4 = 12)

5. The figure shows a closed coil connected to a galvanometer G. The galvanometer shows a deflection to the right when N- Pole of the bar magnet is brought closer to the coil AB.



i) Why does the deflection occur in the galvanometer?

ii) State the observation when,

a) The coil is moved away from N- Pole.

b) Both the coil and magnet are moved to the right with the same speed.

6. Two lamps, one rated 40 W at 220 V and the other 60W at 220V, are connected in parallel to the electric supply at 220V.

a) Draw a circuit diagram to show the connection.

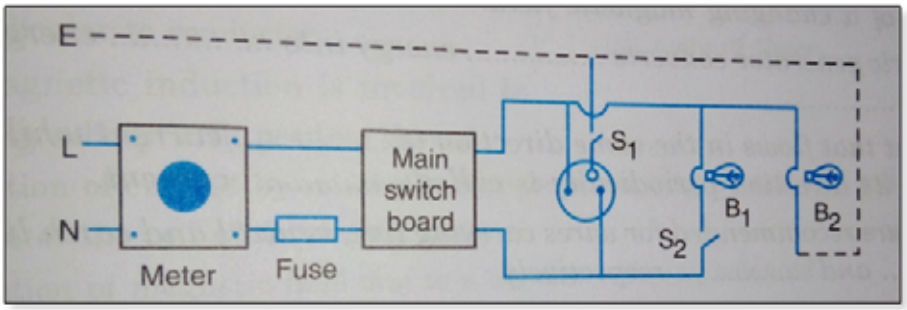
b) Calculate the total current drawn from the electric supply.

7. What is an electric motor? With the help of a labelled diagram, describe the working of a simple electric motor.
8. a) Define the SI unit of electric current.

b) A wire has a resistance of 16 ẅW!. It is melted and drawn into a wire of half its length. Calculate the resistance of the new wire.

IV. Answer the following questions briefly: (5 × 1 = 5)

9. a) The figure shows a domestic electric circuit. Study this circuit carefully and point out any four errors in the circuit. Justify your answer.



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

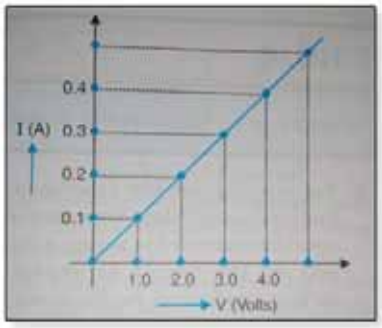
c) Which effect of current is utilized in the working of an electric fuse?

d) Explain why, tungsten is used for making the filaments of electric bulb.

SECTION - B

V. Answer the following questions in two or three sentences each (2 × 2 = 4)

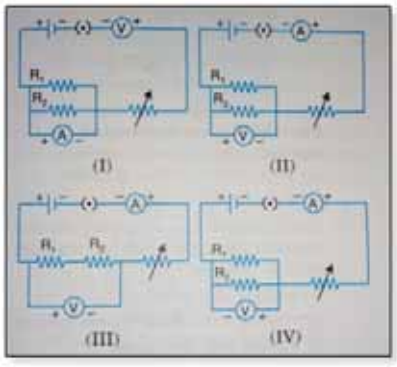
10. In an experiment to study the dependence of current on potential difference across a resistor, a student obtained the graph as shown in the diagram:



a) Find the value of resistance of the resistor.

b) Mention any two factors on which the value of resistance of a material depends.

11. a). The correct set up for determining the equivalent resistance of two resistors R_1 and R_2 when connected in parallel is:



Justify your answer:

b). If R_1 = 4 Ω and R_2 = 8 Ω find equivalent resistance of the circuit.

PART B - CHEMISTRY (27 MARKS)

SECTION - A

I. Answer the following questions:

1. A sanitary worker uses a white chemical compound having strong smell of chlorine gas to disinfect the tank.
   (a) Identify the chemical compound and write its chemical formula.
   b) Give balanced chemical equation for its preparation. (2)
2. Write balanced chemical equations for the following reactions and also identify the type of chemical reaction in each case:
   a) Respiration reaction
   b) Zinc with dilute sulphuric acid
   c) Black and white photography. (3)
3. a) "Sodium is a highly reactive metal and it cannot be obtained from its oxide by heating with Carbon" Give reason.
   b) How can sodium be obtained from its ore? Explain the process. (3)
4. a) In the formation of a compound AB_2, atom 'A' donates one electron to each 'B' atom, Show the electron dot structure of A and B and the formation of AB_2.
   b) What is the nature of bond in AB_2?
   c) Write any two properties of AB_2.
   [Atomic Number of A = 12
   Atomic Number of B = 17] (3)
5. Diya bought new silver anklets. After a month she found that the anklets turned black. She has a doubt that it is not of pure silver, but her neighbour Renu told her that it is of pure silver and advised her to wash it with tamarind or lemon juice to get the lustre back. She followed the advice and got the lustre back. Answer the following questions based on the above passage.
   a) Why anklets turned black after some days?
   b) Why the anklets become lustrous on washing it with tamarind or lemon juice?
   c) Write down the relevant equation for the above reaction.
   d) What values are exhibited by Renu?
   e) Write down a similar reaction of this type. (5)
6. With reference to electro refining of copper answer the following:
   a) Anode, Cathode and electrolyte
   b) What happens to the anode and cathode after this reaction?
   c) Draw a neat labelled diagram required for this purpose. (5)

SECTION - B

7. a) On opening the soda bottle the dissolved CO_2, comes out. How can you confirm the presence of this gas?
   b) Write relevant equation for this reaction. (2)
8. 3 gms of ferrous sulphate crystals are heated in a test tube.
   a) State the colour of ferrous sulphate crystals both before heating and after heating.
   b) Name the gases produced during heating.
   c) Write the chemical equation for the reaction. (2)

PART C -BIOLOGY (27 MARKS)

SECTION - A

I Answer the following questions in one sentence: (1x2=2)

1. What is common for cuscuta, ticks and leeches?
2. State the functions of abscisic acid in plants.

II Answer the following question in two or three sentences: (2x1=2)

1. In the given diagram of human brain label A & B and write their function.

III Answer the following question in five or six sentences each: (3x3=9)

1. As you are going through the science note book of your brother you suddenly noticed a question- 'what is the reason behind regular formation of muscle cramps in cricket players? and the answer given there was 'cramps are developed due to tear in ligament.' Do you think this answer is correct? If so give reasons.
2. A person walks across a room in barefeet and puts his foot on a drawing pin lying on the floor. He lets out a cry. Explain what happens in his nervous system in bringing about this response with the help of a flow chart.
3. a) How does chemical co-ordination take place in animals.
   b) Why are some patients of diabetes treated by giving injections of insulin?

IV Answer the following questions briefly: (5x2=10)

1. a) Draw a schematic representation of transport and exchange of oxygen and carbondioxide in human beings.
   b) Why is double circulation of blood necessary in human beings?
2. Explain the process of digestion of food in mouth, stomach and small intestine in human body.

SECTION - B

V Answer the following questions in two or three sentences each: (2x2=4)

1. In an experiment on photosynthesis, a student fixed a strip of black paper on the dorsal surface of a Bougainvilla leaf in the morning, in the evening she tested the leaf for starch. What will be the result? Give reason.
2. Using the same number of germinating gram seeds, two students A & B set up the experiment separately. Student 'A' used a cotton plug to hold the bent tube in the mouth of the flask and student 'B' used a rubber cork. Write the observations of A & B after 4 hours. What will be the difference in these experimental setup after 4 hours. Give reason.