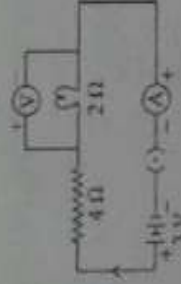


Instructions

- ❖ All questions are compulsory.
- ❖ There are questions in all. Questions 1 to 2 in Section A are very short answer type questions and carry one mark each.
- ❖ Questions 3 to 5 in Section A carry two marks each and questions 6 to 15 in Section A carry three marks each and Questions 16 to 21 in Section A carry five marks each.
- ❖ Question 15 in Section A is a value based question and carries three marks.
- ❖ Questions 22 to 27 in Section B carry two marks each and are based on practical skills.

SECTION A

- ~~P~~Q1 Name the enzyme present in our mouth. (1)
- ~~P~~Q2. Why is pH a better indicator than litmus solutions? (1)
- ~~P~~Q3 Why does a current carrying conductor experiences a force when it is placed in a magnetic field ? State Fleming's left hand rule. (2)
- ~~P~~Q4 Why do copper or aluminium wires generally used for electrical transmission and distribution purposes ? (2)
- ~~P~~Q5 Two wires, one of copper and other of manganin, have equal lengths and equal resistances. Which wire is thicker ? Given that resistivity of copper is lower than that of manganin. Give reason. Explain how plants breathe. (2)
- ~~P~~Q6 State one advantage of AC over DC. (3)
- ~~P~~Q7 An electric oven of 2 kW power rating is operated in a domestic electric circuit that has a current rating of 5A. If the supply voltage is 220V, what result do you expect ? Explain. (3)
- ~~P~~Q8 What is the function of an earth wire ? Why is it necessary to earth metallic appliances ? (3)
- ~~P~~Q9 What is the difference between overloading and short circuiting ? Study the following circuit (3)



Find the reading of voltmeter and ammeter.

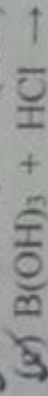
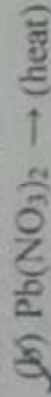
alloy rather than pure metal? Name the alloy also.

OR

Define the unit of power. A 400W refrigerator operates for 16 h per day.

Calculate the cost to operate it for 30 days at Rs 3.40 per kWh.

Complete and balance the following equations and identify their type - (3)



Explain the role of pH with respect to -

(a) acid rain

(b) our digestive system

(c) tooth decay

Q11 What happens when zinc metal reacts with sulphuric acid? Draw a diagram to show the collection and the testing of the gas formed. State the properties of the gas which is confirmed by this experiment. (3)

Q12 (a) Using electron-dot structure find the formula of the compound of B₅ and O₈. (3)

(b) A metal X is a soft metal. What happens when this metal reacts with air or oxygen? Write the equation of the reaction

(c) Name the following -

- a non-metal which is hard in nature
- a non metallic conductor of electricity

OR

(a) Define the reactivity series of metals. Write it in the descending order of reactivity.

(b) What is an amphoteric oxide? Give an example and write the suitable equations.

(c) Compare the reactions of potassium and iron with water using the relevant equations.

BQ13 Why animals with four chambers of heart get sufficient supply of oxygen as compare to animals with three or two chambered heart? (3)

BQ14 What are the three parts of human brain? Which one is the largest? Write its two main functions. (3)

BQ15 After finishing MBBS Sanjeev was assigned house job for one year in a remote village. When he examine the women patients he notice that most of them are suffering from lung diseases and eyesight problem as they cook on chullas using cow dung cakes. He understood the problem and called Khadi and Village industries Commission (KVIC) to the village and ask them to train villagers to set up bio gas plants in the village. (3)

(a) What was the problem in the village which was coming up to affect the health of women?

has stronger magnetic field.

OR

Briefly explain an activity to plot the magnetic field lines around a straight current carrying conductor. Sketch the field pattern for the same, specifying current and field directions. Name the factors on which strength of magnetic field depends.

PQ17 (a) Name the scientist who discovered that a moving magnet can be used to generate electric current. With which name is this phenomenon known? (5)

(b) Two coils 1 and 2 of insulated copper wire having large but different number of turns are wound over a cardboard cylinder. Coil 1 is connected to battery and a plug key. Coil 2 is connected to a galvanometer. How will the galvanometer reading change when

(i) key is plugged in, and (ii) key is taken out.

Give reason for your answer.

(c) Name and state the rule used for determination of direction of induced current due to a changing magnetic field and give one practical application of this phenomenon in everyday life

CQ18 (a) Write a note on the conduction of electricity by ionic compounds. State all the conditions. (5)

(b) What is bleaching powder chemically called? Write the equation for its manufacture.

(c) Why is hydrogen gas not evolved when a metal reacts with nitric acid?

(d) What happens when a basic oxide reacts with water? Write a relevant equation.

CQ19 (a) What is the chlor-alkali process? Explain. (5)

(b) Why is the temperature 373 K important for the formation of Plaster of Paris from gypsum?

(c) Why is tartaric acid added to baking soda to form baking powder?

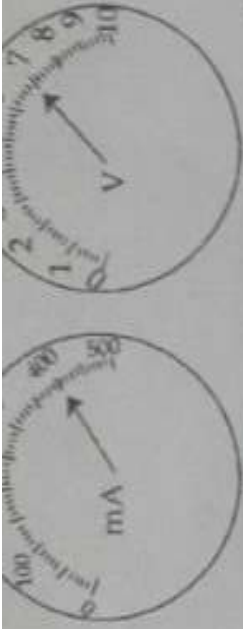
(d) What is 'water of crystallization'? Give an example.

BQ20 Name two plant hormones which are responsible for growth. How do plant hormones reach their target cells? How do these cells react to them? (5)

BQ21 Write short note on (a) Characteristics of a good sources energy (b) Utility of solar cells (c) receptors (d) Role of transpiration in plants (e) Nephron (5)

SECTION B

PQ22 The current flowing through a conductor and the potential difference across its two ends are as per readings of the ammeter and the voltmeter shown below. What would be the resistance of the conductor? (2)



- PQ23 (a) An ammeter has a range of (0-3) amperes and there are 30 divisions on its scale. What is its least count? (2)
- (b) 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, what is the observed reading. (2)
- Q24 For the given substances write their pH value and nature based on the experiment performed in the laboratory - (2)
- (a) ethanoic acid ~~(b)~~ lemon juice ~~(c)~~ water ~~(d)~~ Na_2CO_3 solution
- Q25 How does an acid and a base react with - (2)
- zinc dust ~~(b)~~ red and blue litmus solutions
(explain on the basis of the experiment done in the laboratory)
- BQ26 Why does the level of water rise up in the bend glass tube in the respiration experiment? (2)
- BQ27 How will you prove that the covered part does not synthesize any starch? In the photosynthesis experiment. (2)

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