

Class:- 10

Time:- 2 Hours

Name of the student :

Subject: Science

Total : 50 Marks

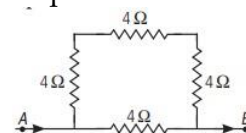
Roll: Sec:

GENERAL INSTRUCTIONS

1. There are 26 questions in this question paper.
2. SECTION A consists of 10 questions carrying 1 mark each.
3. SECTION B consists of 3 very short answer questions carrying 2 marks each.
4. SECTION C consists of 5 short answer questions carrying 3 marks each.
5. SECTION D consists of 3 long answer questions carrying 5 marks each.
6. section E consists of one case-based question carrying 4marks.
7. All questions are compulsory.
8. Use of log tables and calculators is not allowed.

Section-A (1X10=10)

1. 2g of yellow Sulphur powder is burnt in a china dish and the fumes are collected in a test tube. Water is added in the test tube and the solution is tested separately with blue and red litmus paper. The correct option is
 - (a) Blue litmus remains blue and red litmus turns blue
 - (b) Blue litmus turns red and red litmus remains red.
 - (c) Blue litmus turns red and red litmus turns blue.
 - (d) Blue litmus remains blue and red litmus remains red.
2. In the electrolysis of water, if the mass of the gas collected at the anode is m_a and the mass of the gas collected at the cathode is m_c , the value of (m_c/m_a) is
 - (a) 8
 - (b) 16
 - (c) 1/16
 - (d) 1/8
3. If the direction of current in a solenoid, when viewed from a particular end, is clockwise, then that end of the solenoid will be-
 - (a) South Pole
 - (b) East Pole
 - (c) West Pole
 - (d) North Pole
4. Four resistors of value $4\ \Omega$ are connected as shown in the figure. The equivalent resistance between the points A and B is:
 - (a) $3\ \Omega$
 - (b) $4\ \Omega$
 - (c) $6\ \Omega$
 - (d) $1\ \Omega$
5. The respiratory pigment in human beings is:
 - (a) Carotene
 - (b) Chlorophyll
 - (c) Haemoglobin
 - (d) Mitochondria
6. The backflow of blood during the pumping of blood by heart is prevented by:
 - (a) Walls of ventricles
 - (b) Walls of the atrium
 - (c) Valves in the heart
 - (d) Walls between atria and ventricles
7. The small pores present of the leaf's surface are called-
 - (a) Stomata
 - (b) Chlorophyll
 - (c) Guard cells
 - (d) None of these
8. Which oral event will be impacted if salivary amylase level is low in saliva-
 - (a) Proteins breaking down into amino acids
 - (b) starch breaking down into sugars
 - (c) Fats breaking down into fatty acids and glycerol
 - (d) Absorption of vitamins
9. The procedure used for cleaning the blood of a person by separating urea from it is called:
 - (a) osmosis
 - (b) filtration
 - (c) dialysis
 - (d) double circulation
10. Name the tissue which is responsible for transporting water and minerals from the roots to the leaves in plants-
 - (a) Xylem
 - (b) Phloem
 - (c) Epidermis
 - (d) Mesophyll



Section-B (2X3=6)

- 11) Two magnets are lying side by side as shown below. Draw magnetic field line between poles P and Q.



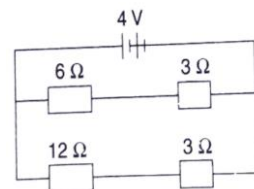
- 12) What is observed after 1 hour of adding the strips of copper, aluminium separately to ferrous sulphate solution filled in two beakers? Name the reaction if any change in colour is noticed. Also write chemical equation of reaction.
- 13) A) State the form in which the following are stored:
- Unused carbohydrates in plants.
 - The energy derived from food in humans,
- B) "Small intestine in herbivores longer than in carnivores" - Give reason. (1+1)

Section-C (3X5=15)

- 14) 1. For the circuit shown in the diagram below:

What is the value of:

- current through $6\ \Omega$ resistor?
- potential difference across $12\ \Omega$ resistor?

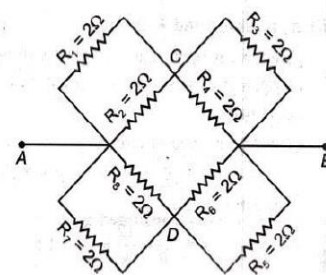


(1.5+1.5)

OR

Find the equivalent resistance across the two ends A and B of this circuit.

Write its mathematical expression of Ohm's law.



(2+1)

15. How can three resistors of resistances $2\ \Omega$, $3\ \Omega$ and $6\ \Omega$ be connected to give a total resistance of
- $4\ \Omega$,
 - $1\ \Omega$

Why the resistance in an ammeter should be as low as possible?

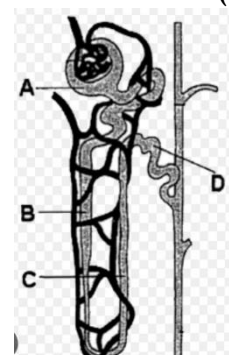
(2+1)

- 16)

- Identify A,B,C and D
- Name the primary excretory product of the Human kidneys.

(0.5×4=2)

(1)



17. Write the chemical equation of the reaction in which the following change take place with an example of each.
- Change in colour
 - Change in temperature
 - Formation of precipitate

18. The pH of a salt which is used to make tasty and crispy pakoras is 14. Identify the salt and write a chemical equation for its formation. List its two uses.

OR

pH has a great importance in our daily life. Explain by giving three examples.

Section-D (5X3=15)

- 19) a) Calculate the electricity bill amount for the month of November of a family if 4 tube lights of 40 W each for seven hours, a TV of 150 W for three hours and two bulbs of 60 W each for four hours are used per day. The cost per unit is RS 5.50.
- b) Write the expression of power in terms of potential difference and resistance.
- c) Mention one reason why tungsten is used for making filament of electric lamp. [3+1+1]

20)

- i. Define indicator. Name two indicators obtained from plants.
- ii. Write a balanced chemical equation for the reaction taking place when sodium oxide reacts with water. How will this solution behaves towards phenolphthalein and red litmus paper?
- iii. State what happens when sodium hydroxide solution reacts with hydrochloric acid.

OR

- i. Define the term decomposition reaction. Give one example each of thermal decomposition and electrolytic decomposition reactions.
- ii. Name two salts that are used in black and white photography. Give equation for the reactions when these are exposed to sunlight.

21) State the double circulation process in human body with a neat diagram.

(3+2)

OR

- i. Differentiate between breathing and respiration.
- ii. Draw a flow chart to show the breakdown of glucose by various pathways.
- iii. State the functions of alveoli in the process of respiration

(2+2+1)

SECTION-E (4X1=4)

22. An insulated copper wire wound on a cylindrical cardboard tube such that its length is greater than its diameter is called a solenoid. When an electric current is passed through the solenoid, it produces a magnetic field around it. The magnetic field produced by a current-carrying solenoid is similar to the magnetic field produced by a bar magnet. The field lines inside the solenoid are in the form of parallel straight lines. The strong magnetic field produced inside a current-carrying solenoid can be used to magnetise a piece of magnetic material like soft iron, when placed inside the solenoid. The strength of magnetic field produced by a current carrying solenoid is directly proportional to the number of turns and strength of current in the solenoid.

(i) The strength of magnetic field inside a long current-carrying straight solenoid is

- | | |
|---|--|
| (a) more at the ends than at the centre | (b) minimum in the middle |
| (c) same at all points | (d) found to increase from one end to the other. |

(ii) The north-south polarities of an electromagnet can be found easily by

- | | |
|-------------------------------|------------------------------|
| (a) Fleming's right-hand rule | (b) Fleming's left-hand rule |
| (c) Clock face rule | (d) Left-hand thumb rule |

(iii) For a current in a long straight solenoid N-and S-poles are created at the two ends.

Among the following statements, the incorrect statement is

- (a) The field lines inside the solenoid are in the form of straight lines which indicates that the magnetic field is the same at all points inside the solenoid.
 - (b) The strong magnetic field produced inside the solenoid can be used to magnetise a piece of magnetic material like soft iron, when placed inside the coil.
 - (c) The pattern of the magnetic field associated with the solenoid is different from the pattern of the magnetic field around a bar magnet.
 - (d) The N- and S-poles exchange position when the direction of current through the solenoid is reversed.
- (iv) A soft iron bar is enclosed by a coil of insulated copper wire as shown in figure. When the plug of the key is closed, the face B of the iron bar marked as

- | | |
|------------|--------------------------------|
| (a) N-pole | (b) N-pole if current is large |
| (c) S-pole | (d) S-pole if current is small |

