Karnataka Board

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Midterm Examination: 2022-23 MAX MARKS: 80

STD: 10 SUBJECT: SCIENCE TIME: 3.15 HOUR

PART A: PHYSICS

I. Four alternatives are given for each of the following questions. Choose the correct alternative and write the complete answer along with its letter of alphabet. 3x1=3

1. SI unit of resistance is :
   a) Ohm b) Coulomb c) Ohm meter d) Ampere
2. The pair of metals most commonly used in the manufacture of electrical transmission wires.
   a) Silver and copper b) Copper and iron
   c) Copper and aluminium d) Aluminium and iron
3. Which one acts as a commutator in electric motors?
   a) Armature b) Split rings c) Magnet d) Carbon brush

II. Answer the following questions: 3x1=3

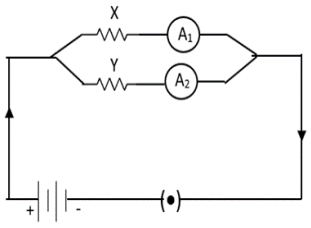
4. State Joule's law of heat generation.
5. What is the use of fuse in electrical circuit?
6. How many amperes of current should these instruments be used in a circuit?
   a) Fan b) Refrigerator

III. Answer the following questions: 2x2=4

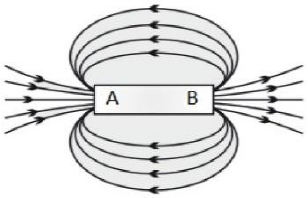
7. Your friend has connected electrical devices of different capacities in series. Is this true or false, justify your answer.

OR

In a given circuit two wires X & Y are made of same metal and have equal length, but wire Y is slightly thicker than wire X. When the current flowing through the two wires is measured separately by an ammeter, which one carries more current? Why?



8. a) Draw this diagram and Identify the North Pole.
   b) At which point this magnet has got stronger magnetic field?



IV. Answer the following questions: 3x3=9

9. Draw the circuit diagram used to practice Ohm's law.
10. a) What is short circuit? How can it be prevented?
    b) What is the function of earthing wire?

OR

a) What is solenoid? How is the magnetic field inside the solenoid?
b) Name two devices that use an electric motor.

11. a) Explain Faraday's experiment related to electromagnetic induction.
    b) Differentiate between direct current and alternating current.

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V. Answer the following questions: **4x1=4**

12. a) State any two precautionary measures that can be taken to avoid overloading in a household electrical circuit.

b) While making a motor, person A winds a wire on aluminium and person B on soft iron. Whose decision is better? Give a suitable reason for your answer.

VI. Answer the following questions: **5x1=5**

13. a) How to connect ammeter and voltmeter in an electrical circuit? What is the use of these in electrical circuit?

b) State the factors on which the heat generated in a resistor depends on Joule's law of heat generation.

PART B: CHEMISTRY

VII. Four alternatives are given for each of the following questions. Choose the correct alternative and write the complete answer along with its letter of alphabet. **3x1=3**

14. The gas used to protect chips from oxidation(rancidity) in packaging is:
    a) Hydrogen b) Oxygen c) Nitrogen d) Chlorine
15. A solution turns blue litmus into red, its pH value is:
    a) 7 b) 5 c) 9 d) 12
16. When you are bitten by honeybee, the home remedy you can use is:
    a) Common salt b) Turmeric c) Lemon juice d) Baking soda

VIII. Answer the following questions: **3x1=3**

17. Rancidity is an oxidation reaction. Why?
18. What is neutralisation?
19. Alkaline toothpaste is used to prevent tooth decay. Why?

IX. Answer the following questions: **3x2=6**

20. Silver nitrate should not be stored in a transparent container. Give scientific reasons.
21. Draw a diagram to show acid solution in water conducts electricity.
22. What are amphoteric oxides? Give example.

X. Answer the following questions: **3x3=9**

23. a) Chemical equations must be balanced. Why?
    b) Write balanced chemical equation for the following reactions.
    i) Hydrogen combines with oxygen to form water.
    ii) quick lime added to water

OR

How exothermic reactions are different from endothermic reactions? Give one example for each with suitable chemical equations.

24. The reaction of acids with metallic oxides resembles neutralisation reaction. Justify this statement and explain with an example.
25. Draw a diagram of electrolytic purification of copper and label
    a) anode b) cathode

XI. Answer the following questions: **1x4=4**

26. a) Most of the metals do not produce hydrogen when reacts with dilute nitric acid. Why?
    b) Zinc displaces iron from ferrous sulphate solution, why? Write the chemical equation for this reaction.

OR

a) Metals are used in the production of cooking utensils and electric wires. Why?

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b) Write any two differences in chemical properties of metals and non-metals.

PART C: BIOLOGY

XII. Four alternatives are given for each of the following questions. Choose the correct alternative and write the complete answer along with its letter of alphabet. **2x1=2**

27. Which among the following is the function of stomata?

a) water absorption b) Transpiration

c) translocation d) Water transportation

28. Which plant hormone promotes cell division?

a) Auxin b) Gibberellin c) Cytokinin d) Abscisic acid

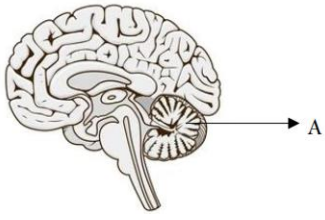
XIII. Answer the following questions: **2x1=2**

29. What is nutrition?

30. What are Decomposers?

XIV. Answer the following questions: **3x2=6**

31. Identify and name the part A and write its function.



32. Suggest any four activities in the daily life which are eco friendly

33. Describe the formation of ozone layer with equation.

OR

Why the flow of energy in the ecosystem is unidirectional?

XV. Answer the following questions: **3x3=9**

34. Explain the breakdown of glucose through different processes.

OR

Mention the events that take place during the process of photosynthesis in plants.

35. Write the differences between arteries and veins.

36. Write the functions of following hormones.

a. Thyroxin b. Insulin c. testosterone

XVI. Answer the following questions: **2x4=8**

37. Draw a diagram of the human excretory system and label the following parts

a. Kidney b. ureter c. urinary bladder d. urethra

38. i) Explain how electrical impulses transferred in nerve cell.

ii) Describe the nastic movement occur in the leaves of touch me not plant.

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