CLASS X
SAMPLE PAPER
# SCIENCE(Phy & Chem)

MM : 60

Section – A   <u>1 X 3 = 3 marks</u>

Q1   Can you predict about the air- freshners available at shop contain ionic or covalent bond ? Why?

Q2   What is the minimum resistance that can be obtained by combining 4 coils of resistors 4, 8, 12, 24 ohm?

Q3   Iron react with steam to form iron oxide and hydrogen gas, Write the balanced chemical equation?

<div align="right"><u>2 X 7 = 14marks</u></div>

Q4   Fresh milk has a pH of 6. How do you think the pH will change as it turns into curd

Q5   Which has a greater resistance a 100 W bulb or 60 W bulb?

Q6   Explain the formation of magnesium chloride by the transfer of electrons

Q7   Discuss the major hazards associated with nuclear power plant. Name the country and the nuclear power plant which was recently in news on account of one of the largest disaster?

Q8   Name and state the rule which gives the direction of induced current.

Q9   An electric room heater is rated at 2kW. Calculate the cost of using it for 2 hr's daily for the month of September. If the cost of unit is Rs 4

Q10   Magnetic field lines shown in fig., Name the poles of magnets
   facing each other. Why don't two magnetic lines intersect each other?
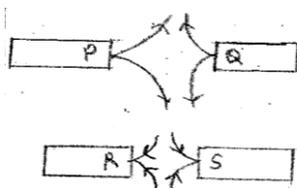
<div align="right"><u>3 X 7 = 21marks</u></div>

Q11   Why does a current carrying conductor kept in a magnetic field experience force. Name and state the rule used for determination of direction of this force.

Q12   Draw a schematic diagram of circuit consisting battery of 12 V, three resistors of 5,10 and 20 ohm connected in parallel . Show an ammeter and voltmeter to measure current and pot. Diff. also calculate the current in circuit.

Q13   Construction of dams submerges large areas of forest and villages, How does this contribute to the green house effect?

Q14 Balance the following equation and identify the substance oxidized, reduced and oxidizing agent

$H_2S + SO_2 \longrightarrow H_2O + S$

Q15 A 18 ohm resistance wire folded 3 times on it calculate the new resistance?

Q16 Salt A commonly used in bakery products on heating gets converted into another salt B which itself is used for removal of hardness of water and a gas C is evolved. The gas C when passed through lime water turns it milky. Identify A, B and C.

Q17 A white shirt has yellow stain of curry. When soap is rubbed on this shirt the yellow stain turns reddish brown. On rinsing the shirt with plenty of water the reddish brown stain turns yellow again.

1. What is the nature of soap acidic or basic
2. Name the natural indicator present in curry stain
3. Why does the changes in color during the rinsing in plenty water.

5 X 2 = 10marks

Q18 (a) Two students perform an experiment on series and parallel combination of two given resistors R1 and R2 Shown in graph . which of this graph is correctly labeled in terms of "series" and "parallel" justify it .
(b)An electrical geyser has the rating 200W-220V marked on it what should be the capacity of fused wire that may require for the safe use of geyser.
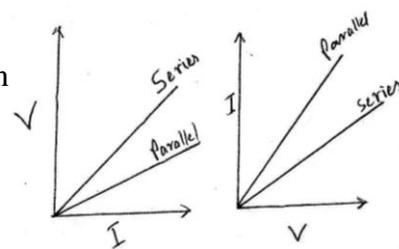
Q19 A metal which exists as a liquid at room temperature is obtained by heating its sulphide ore in the presence of air –

1. Name the metal and write its chemical symbol.
2. Write the name and formula of the sulphide ore.
3. Name a common device in which this metal is used.
4. Give the equations of chemical reactions involved in the production of metal from its sulphide ore.
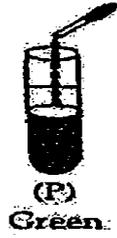
-----OR----

(a)A person observe black coating on silver medal and green coating on copper coins. Which phenomenon is responsible for this coating, Write the name of black and Green coating
(b)Which one is blue in colour $CuSO_4$ or $CuSO_4$ $5H_2O$ justify it
(c)Which gas is collected in double amount on electrolysis of water Why?

Section – B   **1 X 12 = 12 marks**

Q20. On adding a few drops of universal indicator to three colourless solutions taken separately in three test tubes labeled P,Q,R respectively the colours developed in the solutions are marked in the following figures :

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(P)
Green

(Q)
Red

(R)
Violet

What is the correct decreasing order of the pH. Value of these solutions.
(a) P>Q>R   (b) Q>P>R   (c) R>Q>P   (d) R>P>Q

Q21.   A student has to connect 4 cells of 1.5V each, to form a battery of voltage 6V
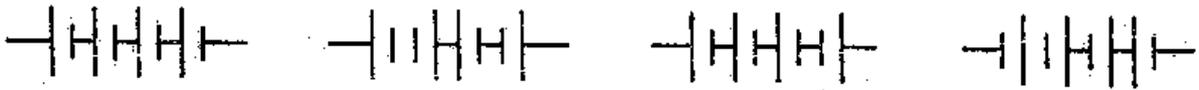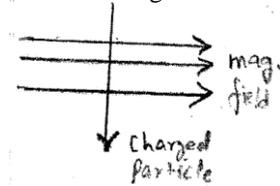

The correct way of connecting these cells is shown in figure.
(a) A   (b) B   (c) C   (d) D

Q22.   A charged particle enters at right angles into a uniform magnetic field as shown in figure. If direction of force is vertically upward then the nature of charged particle is
(a) positive
(b) negative
(c) neutral
(d) Can't say

Q23.   The pH values of distilled water, fruit juice and sodium bicarbonate were measured using pH papers. What is the correct decreasing order of pH values
(a) Water > Fruit juice > sodium bicarbonate
(b) sodium bicarbonate > Water > Fruit juice
(c) Fruit juice > Water > sodium bicarbonate
(d) Water > sodium bicarbonate> Fruit juice

Q24   Aluminium sulphate and copper sulphate solutions were taken in two test tubes I and II, respectively. A few pieces of iron filings were then added to both the solutions. The four students A, B, C and D recorded their observations in the form of a table as given below :

Student	$Al_2(SO_4)_3$ Solution (I)	Copper Sulphate Solution (II)
A	Colourless solution changes to light green	Blue colour of the solution is retained
B	Colour of the colourless solution does not change	Blue colour of the solution changes to green
C	Colourless solution changes to light blue	Blue colour of the solution changes to green
D	Colour of the colourless solution remains unchange	Blue colour of the solution fades away

(A)   (B)   (C)   (D)

Q25.   For the circuits shown in figure I and II, the voltmeter reading would be
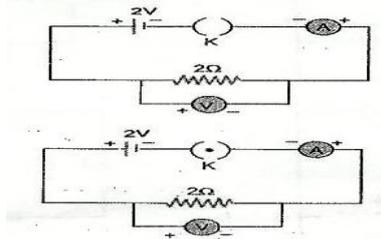
    a.   2V in circuit 1 and OV in circuit II   b. OV in both circuit II

    c.   2V in both circuits   d. OV in circuit 1 and 2V in circuit II

Q26. A student measured the pH value of 4 solutions A, B , C and D, which were 4,1,13 and 11 respectively. Which of the following statement are correct:

(a) A is stronger acid and B is weak acid

(b) D is stronger base and C is weak base

(c) D is weak base and B is stronger acid

(d) C is stronger base and A is weak acid

(1) a and b   (2) b and c   (3) c and d   (4) b and d

Q27. A student was given three solutions marked A, B and C and asked to arrange an increasing value of pH values. The student put two drops of each solution on three strips of universal indicator paper separately. The color shown is as follows :
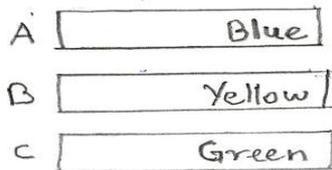
Which of the following gives correct increasing order of pH

(1) C<A<B   (2) B<C<A   (3) A<B<C   (4)C<B<A

Q28. The current flowing through a resistor connected in an electrical circuit and the potential difference developed across its ends are shown in the given (in figF):
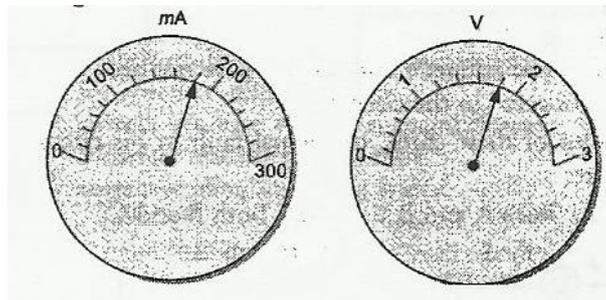
The value of resistance of the resistor in ohms is
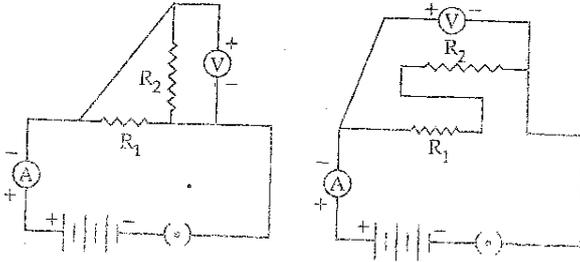
  a.   25   b.   20   c.   15   d.   10

Q29. Two resistances 1Ω and 2Ω are connected in series and then in parallel. The ratio of the effective resistance of series and parallel combination of resistances is

(a) 2:9   (b) 9:2   3:1   (d) 1:2

Q.30 Four resistors of 10Ω are connected in the form of square. Resistance between opposite corners is a. 5Ω   b.40Ω   c.10Ω   d.20Ω

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Q31   The resistors R_1 and R_2 are connected in

(e) Parallel in both circuits
(f) Series in both circuits
(g) Parallel in circuit I and in series in circuit II
(h) Series in circuit I and in parallel in circuit II

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