NEW STANDARD ACADEMY

1. What is reflex action? Describe it with suitable examples
2. How many types of phytohormones? Mention their names.
3. How does sympathetic system differ from parasympathetic system?
4. Name the phytohormones that control bolting and morphogenesis
5. What is difference among dwarfism, gigantism and acromegaly?
6. What is apical dominance? Which hormone shows antagonistic effect of apical dominance?
7. Mention the main function of vasopressin
8. Why is pituitary gland called as master gland?
9. What is the difference between enzymes and hormones?
10. Which hormone exhibits parthenocarpy?
11. What do you mean by medulla oblongata? Where is it situated?
12. Mention any two hormones secreted by pituitary gland
13. Design an experiment to demonstrate chemotropism
14. Mention the role of iodine for the thyroid gland
15. What do you understand by cranium and cerebrospinal fluid?
16. What do you mean by seismonastic movement? Give an example.
17. Describe the function of medulla in the hindbrain.
18. How do we detect the taste of sweets? Where is it located?
19. Describe feedback mechanism
20. Differentiate between diabetes mellitus and diabetes insipidus.

1. A bud of petunia becomes reddish purple in rain. What does it indicate?
2. What is litmus solution? What is its colour in natural form?
3. Which has more H^+ ion concentration, I M HCl or 1M CH_3COOH?
4. Which has more OH^- ion concentration 1 M NaOH or 1 M NH_4OH?
5. Enamel of teeth contains which chemical?
6. 8. Which of the solutions-tomato juice, distilled water, lemon juice and NaOH solution could have the pH 2, 4,7 and 14?
7. How is chloride of lime chemically different from calcium chloride? Why does chloride of lime gradually lose its chlorine when kept exposed to air?
8. How are bases different from alkalies? Are all bases alkalies?
9. Which of the following compounds do not show acidic properties in their aqueous solutions? Methane, vinegar lemon juice, alcohol, carbon dioxide, glucose.
10. A blue salt becomes white on heating. Explain the change in colour?
11. How will you prepare hundred times dilute solution from 1 mL of concentrated sulphuric acid solution? What precautions do you take in preparing dilute acids?
12. What does pH stand for? What does a pH scale indicate?
13. State the chemical property in each case on which the following uses of baking soda are based:
    (a) as an antacid,
    (b) as a constituent of baking powder.
14. How does acetic acid help in the preservation of food?
15. Write two observations you make when quicklime is added to water?
16. What is meant by the 'term pH of solution'? The pH of gastric juices of two persons A and B were found to be 1 and 3 respectively. The stomach juice of which person is more acidic?
17. A calcium compound is yellow white powder and is used as disinfectant and in textile industry. Name the compound, which gas is released when this compound is exposed to air?
18. How is caustic soda manufactured?
19. What happens when copper sulphate crystals are dropped into concentrated sulphuric acid?
20. Name the gas evolved when dilute sulphuric acid acts on sodium carbonate.

1. A piece of wire of resistance R is cut into five equal parts. These parts are then connected in parallel. If The equivalent resistance of this combination is R′, then the ratio R/R' is:

2. Which of the following terms does not represent electrical power in a circuit?
   a) I^2R b) IR^2 c) VI d) V^2/R

3. An electric bulb is ratedType equation here. 220V and 100w. When it is operated on 110V, the power consumed will be:

4. Two conducting wires of the same material and of equal lengths and equal diameters are first connected in series and then in parallel in electric circuit. The ratio of the heat produced in series and parallel combinations would be:

5. How is voltmeter connected in the circuit to measure potential difference between two points?

6. A copper wire has a diameter of 0.5 mm and a resistivity of 1.6×10^{-6} ohm cm. How much of this wire would be required to make a 10 ohm coil? How much does the resistance change if the diameter is doubled?

7. The value of current, I, flowing in a given resistor for the corresponding value of potential difference, V, across the resistor are given below :

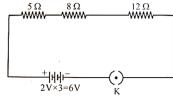 | I (ampere) : | 0.5 | 1.0 | 2.0 | 3.0 | 4.0 |
   |---|---|---|---|---|---|
   | V(volt) : | 1.6 | 3.4 | 6.7 | 10.2 | 13.2 |

   Plot a graph between V and I and calculate the resistance of resistor.

8. A battery of 9 V is connected in series with resistors of 0.2, 0.3, 0.4, 0.5 and 12Ω. How much current would flow through the 12Ω resistor?

9. How many 176 Ω resistors (in parallel) are required to carry 5 A in 220 V line?

10. Several electric bulbs designed to be used on a 220 V electric supply line, are rated 10 W. How many lamps can be connected in parallel with each other across the two wires of 220 V line if the maximum allowable current is 5 A?

11. A hot plate of an electric oven connected to a 220 V line has two resistance coils A and B, each of 24Ω resistance, which may be used separately, in series, or in parallel. What are the currents in the three cases?

12. Compare the power used in the 2 Ω resistor in each of the following circuits :
    (i) a 6V battery in series with 1 Ω and 2 Ω resistors, and
    (ii) a 4 V battery in parallel with 12 Ω and 2 Ω resistors.

13. Two lamps, one rated 100 W at 220 V, and the other 60 W at 220 V, are connected in parallel to the electric mains supply. What current is drawn from the line if the supply voltage is 220 V?

14. An electric heater of resistance 8 Ω draws 15 A from the service mains for 2 hour. Calculate the rate at which heat is developed in the heater.

15. Explain the following:
    (a) Why is tungsten used almost exclusively for filament of incandescent lamps?
    (b) Why are the conductors of electric heating devices, such as toasters and electric irons, made of an alloy rather than a pure metal?
    (c) Why is the series arrangement not used for domestic circuits?

16. Calculate the number of electrons consisting one coulomb of charge.

17. On what factors does the resistance of a conductor depend?

18. Why are coil of electric toasters and electric irons made of an alloy rather than a pure metal?

19. Which among, iron and mercury is better conductor?
    (resistivity of iron = 10.0×10^{-8} Ω m and resistivity of mercury = 94×10^{-8} Ω m)

20. Draw a schematic diagram of a circuit consisting of three batteries of 2V each, a 5 Ω resistor, 8 Ω resistor and a 12 Ω resistor and a plug key, all

connected in series.

NEW STANDARD ACADEMY

SEMRI KOTHI SUPER MARKET, RAEBARELI

CLASS 10 (MATH'S) DPP (Academy) 5/08/2024

1. The traffic lights at three different road crossings change after every 48 seconds, 72 seconds and 108 seconds. If they change simultaneously at 7 a.m., at what time will they change together next?
2. Prove that 4^n can never end with the digit 0, where n is a natural number.
3. where p is prime.
4. Prove that $\sqrt[3]{6}$ is an irrational number.
5. If x + 2 is a factor of the polynomial $5x^3 + (k + 2) x^2 - 3kx + 2$, then find the value of k
6. *If (x+α)* is a factor of two polynomials $x^2 + px + q$ and $x^2 + mx + n$, then prove that $= \frac{n-q}{m-p}$.
7. Find the zeroes of the polynomial *f(x)*= $x^2 + 6x - 11$. Also verify the relationship between the zeroes and coefficients of *f(x)*
8. If $\frac{2}{3}$ *and* -3 are zeroes of the polynomial $ax^2 + 7x + b$, then find the values of a and b.
9. For all real values of c, the pair of equations x-2y = 8 and 5x - 10y = c have a unique solution. Justify whether it is true or false.
10. For the pair of equations $x\lambda + 3y = -7$ and 2x + 6y = 14 to have infinitely many solutions, the value of λ should be 1. Is this statement true? Give reasons.
11. Solve 2x+3y = 11 and 2x- 4y =-24. Hence, find the value of 'm' for which y = mx+7.
12. The age of the father is three times the sum of ages of his two children. After 5 years, his age will be two times the sum of the ages of his children Find the present age of the father.
13. If 2/3 is a root of the equation $kx^2 - x - 2 = 0$ then find the value of k.
14. Use the substitution y = 2x - 1 to solve for x:
    3(2x-1)2 + 4(2x - 1) - 4 = 0.
15. Solve for x : $\sqrt{6x+7} - (2x - 7) = 0$
16. Check whether the equation $6x^2 - 7x + 2 = 0$ has real roots and if it has, find them .
17. Divya deposited 1000 at compound interest at the rate of 10% per annum. The amounts at the end of first year, second year, third year,... form an AP. Justify your answer.
18. Find the 10th term of the AP:2 ,7 ,12 ,…
19. For what value of n,are the nth terms of two Aps:
20. Find the :$7+10\frac{1}{2} + 14 + \cdots + 84.$