NEW STANDARD ACADEMY

SEMRI KOTHI SUPER MARKET, RAEBARELI

CLASS 10 (BIOLOGY) DPP (Academy) 08/07/2024

1. What is the difference between a reflex action and walking?
2. What happens at the synapse between two neurons?
3. Which part of the brain maintains posture and equilibrium of the body?
4. How do we detect the smell of an agarbatti (incense stick)?
5. What is the role of the brain in reflex action?
6. What are plant hormones?
7. How is the movement of leaves of the sensitive plant different from the movement of a shoot towards light?
8. Give an example of a plant hormone that promotes growth.
9. 9. How do auxins promote the growth of a tendril around a support?
10. How does chemical coordination take place in animals?
11. What is the function of receptors in our body? Think of situations where receptors do not work properly. What problems are likely to arise?
12. Draw the structure of a neuron and explain its function.
13. Name the part of brain which controls equilibrium and posture of body.
14. Name the part of hind brain which takes part in regulation of respiration.
15. We suddenly withdraw our hand when a pin pricks. Name the type of response involved in this action.
16. Name the box in which brain is situated. What is the weight of fully grown human brain?
17. Name the largest and second largest part of the brain
18. Define nerve impluse Which structure in a neuron helps to conduct a nerve impulse
    (i) towards the cell body?
    (ii) away from the cell body?
19. Explain the structure of a brain with the help of a suitable diagram. Give one function each of various parts of brain.
20. Mention the part of the brain which controls the involuntary actions like blood pressure, salivation etc.

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CLASS 10 (CHEMISTRY) DPP (Academy) 08/07/2024

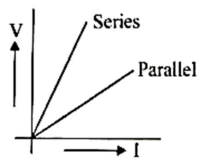
1. What is the common name of the compound $CaOCl_2$?
2. Name the substance which on treatment with chlorine yields bleaching powder.
3. Name the sodium compound which is used for softening hard water.
4. What will happen if a solution of sodium hydrogen carbonate is heated? Give the equation of reaction involved.
5. Write an equation to show the reaction between Plaster of Paris and water.
6. Write the two ways in which Table salt occurs in nature.
7. Name the salt which is used as preservative in pickles and in curing fish and meat.
8. Give the formulae and name of three chemicals that are made from common salt.
9. How is sodium chloride (Table salt) obtained from sea water
10. Why is sodium chloride required in our body? How does it occur in underground deposita?
11. What happens when brine is electrolysed?
12. What is the chemical name of baking soda? How it is produced on large scale? Give its important uses.
13. What is baking powder? What is the difference between baking powder and baking soda? What happens when baking powder is dissolved in water?
14. How does baking powder make bread or cake soft and spongy " What will happen if baku while making cake?
15. What does a voda-acid fire extinguisher contain? Explain its working.
16. What happens when brine reacts with ammonia and carbon dioxide?
17. What is the chemical formula of caustic soda, baking soda, bleaching powder, washing soda and soda ash?
18. Name the compound which has detergent properties (cleansing agent) and is used for softening hard water.
19. Name the metal carbonate which is soluble in water, the aqueous solution of which turns red litmus to blue and is used in the preparation of borax.
20. Give the chemical formula of (i) Plaster of paris (ii) Gypsum.

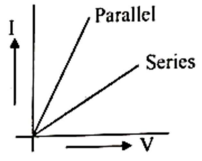
NEW STANDARD ACADEMY

SEMRI KOTHI SUPER MARKET, RAEBARELI

CLASS 10 (PHYSICS) DPP (Academy) 08/07/2024

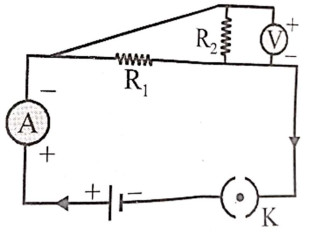
1. A current of 4 A passes through a resistance of 100 Ω for 15 minutes. Calculate the heat produced in calories.
2. A current passes through a resistor for some time. It produced 400 cal of heat in this period. If the current is doubled, how much heat will be produced for the same durations?
3. A bulb draws 24 W when connected to a 12 V supply. Find the power if it is connected to a 6 V supply. (Neglect resistance change due to unequal heating in the two cases.).
4. Two identical resistors of resistance R are connected in series with a battery of potential difference V for time t. The resistors are later connected in parallel and the same battery is connected across the combination for time t Compare the heat produced in the two cases
5. A bulb is rated 40 W, 220 V. Find the current drawn by it when it is connected to a 220 - V supply
6. A bulb is rated 60 W, 240 V. Calculate its resistance when it is on. If the voltage drops to 192 V, what will be the power consumed and the current drawn?
7. 27. A room has two tube lights, a fan and a TV. Each tube light draws 40 W, the fan draws 80 W, and the TV draws 60 W. On the average, the tube lights are kept on for five hours, the fan for twelve hours and the TV for eight hours every day. The rate for electrical energy is Rs. 3.10 per kWh. Calculate the cost of electricity used in this room in a 30 day month.
8. Two students perform the experiments on series and parallel combinations of two given resistors R_1 and R_2 and plot the following V-I graphs.



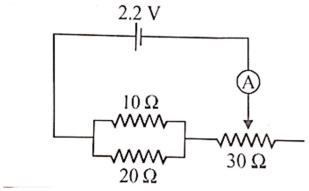


Which of the graphs is (are) correctly labelled in terms of the words 'series' and 'parallel'. Justify your answer.

9. Define 'I volt'. State the relation between work, charge and potential difference for an electric circuit. Calculate the potential difference between two terminals of the battery if 100 J of work is required to transfer 20 C of charge from one terminal of the battery to the other.
10. If one micro-amp. current is flowing in a wire, the number of electrons which pass from one end of the wire to the other end in one second is:
11. Which of the circuit components in the following circuit diagram and connected in parallel?



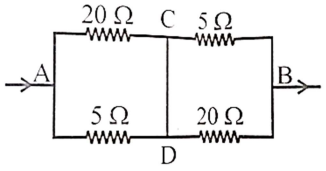
12. 2 points A and B are at electric potentials 10 V and 100 V respectively. A charge q is taken from A to B and 18 joule of work is done. The value of q is:
13. The resistance of rheostat shown in the figure is 0-30 Ω. Neglecting the resistance of ammeter and connecting wire the minimum and maximum currents through the ammeter will be



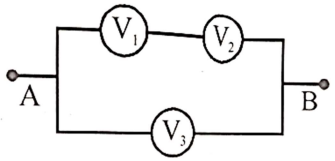
14. A 10 V battery is connected to a series combination of two resistance of 4000Ω and 6000Ω Anon-ideal voltmeter of resistance 10000Ω connected across 4000 Ωreads 3.226 V. What would be the value if the same voltmeter connected across 6000 Ω?

15. The terminal potential difference of a cell of EMF ‘E’ and internal resistance ‘r’ is given by the formula.

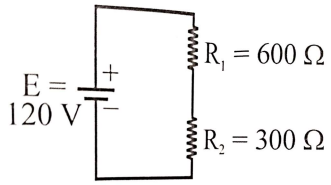
16. When some potential difference is maintained between A and B, current *I* enters the network at A and leaves at B .



17. Three voltmeters, all having different resistances, are joined as shown in the figure. When some potential difference is applied across A and B, their readings are V_1 V_2, V_3:



18. In the circuit, the battery is ideal. A voltmeter of resistance 600 Ω is connected in turn across R_1 and R_2, giving readings V_1, and V_2 respectively:



19. An electric iron of resistance 20 Ω takes a current of 5 A. Calculate the heat developed in 30 seconds,
20. An electric motor takes 5 A from a 220 V line. Determine the power of the motor and energy consumed in 2 h.

NEW STANDARD ACADEMY

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CLASS 10 (MATH'S) DPP (Academy) 08/07/2024

1. Insert a rational and an irrational number between 2 and 3.
2. Find two irrational numbers between 2 and 2.5.
3. Find two irrational numbers lying between $\sqrt{2}$ and $\sqrt{3}$.
4. Find two irrational numbers between 0.12 and 0.13.
5. Prove that
   (i) $\sqrt{2}$ is irrational number
   (ii) $\sqrt{3}$ is irrational number

   Similarly $\sqrt{5}$,$\sqrt{7}$, $\sqrt{11}$ …... are irrational numbers.

6. Prove that $\sqrt{7} - 3$ is irrational
7. Prove that :
   (i) $\frac{\sqrt{5}}{3}$ (ii) $2\sqrt{7}$ are irrational
8. Using Euclid's division algorithm, find the H.C.F. of
   (i) 135 and 225 (ii) 196 and 38220
9. Show that every positive integer is of the form 2q and that every positive odd integer is of the from 2q + 1, where q is some integer.
10. Show that any positive odd integer is of the form 4q + 1 or 4q + 3, where q is some integer.
11. Define (i) rational numbers (ii) irrational numbers (iii) real numbers.
12. Classify the following numbers as rational or irrational :
    (i) $\frac{22}{7}$ (ii) 3.1416 (iii) π
    (iv) 3.142857 (v) 5.636363..... (vi) 2.040040004.....
13. Prove that each of the following numbers is irrational :
    (i) $\sqrt{6}$ (ii) $(2 - \sqrt{3})$
14. Prove that $\frac{1}{\sqrt{3}}$ is irrational.
15. Without actual division, show that each of the following rational numbers is a non-terminating repeating decimal :
    (i) $\frac{11}{(2^3 \times 3)}$ (ii) $\frac{73}{(2^3 \times 3^3 \times 5)}$ (iii) $\frac{9}{35}$
16. Without actual divison, show that each of the following rational numbers is a terminating decimal. Express each in decimal form :
    (i) $\frac{171}{800}$ (ii) $\frac{15}{1600}$
17. Express each of the following as a fraction in simplest form :
    (i) $0.\overline{8}$ (ii) $0.\overline{24}$
18. Decide whether the given number is rational or not :
    (i) 53.123456789 (ii) $31.\overline{123456789}$
19. What do you mean by Euclid's division algorithm.
20. A number when divided by 61 gives 27 as quotient and 32 as remainder. Find the number.