

REVISION TEST SERIES - 3

SCIENCE

CLASS X

Time : 1½ hrs.

SET A

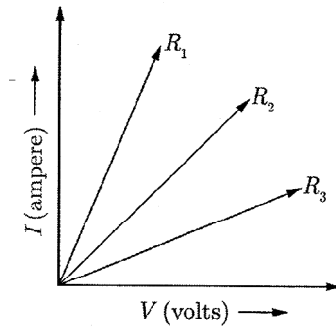
Mark : 40

SECTION - A (OBJECTIVE TYPE)

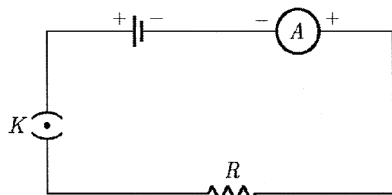
8 × 1 = 8

- is obtained by passing Cl_2 over dry slaked lime.
 - Plaster of paris
 - Bleaching powder
 - Bleaching soda
 - Washing soda
- Builders use plaster of paris to make the surface layer of the inner walls of a building. Which property of plaster of paris powder makes it a suitable building material?
 - It is light weight
 - It is white in colour
 - It is found readily in nature
 - It gets hard when mixed with water
- A student carries out an experiment and plots the V-I graph of three samples of nichrome wire with resistance R_1 , R_2 and R_3 respectively (Figure). Which of the following is true?

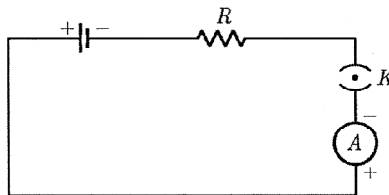
- $R_1 = R_2 = R_3$
- $R_1 > R_2 > R_3$
- $R_3 > R_2 > R_1$
- $R_2 > R_3 > R_1$



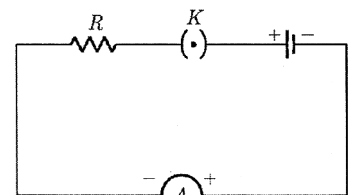
- A cell, a resistor, a key and ammeter are arranged as shown in the circuit diagrams of Figure. The current recorded in the ammeter will be



(i)

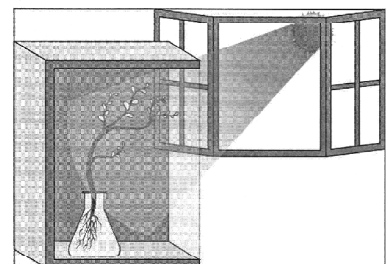


(ii)



(iii)

- maximum in (i)
 - maximum in (ii)
 - maximum in (iii)
 - the same in all the cases
- What is the maximum resistance which can be made using five resistors each of $1/5\Omega$?
 - $1/5\Omega$
 - 10Ω
 - 5Ω
 - 1Ω
 - Akshay potted some germinated seeds in a pot. He put the pot in a cardboard box that was open from one side. He keeps the box in a way that the open side of box faces sunlight near his window. After 2-3 days he observes the shoot bends towards light as shown in image.



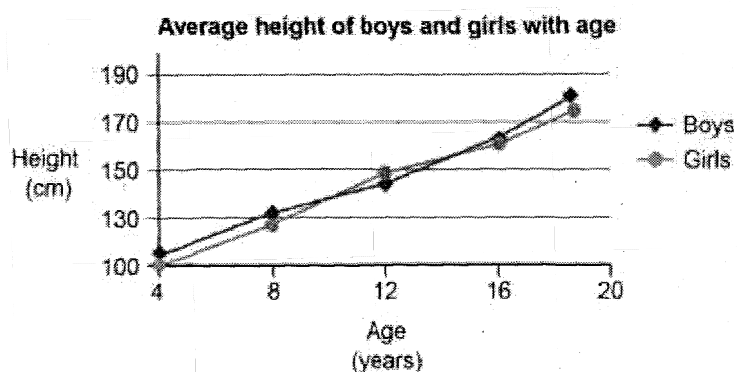
Which type of tropism he observes?

- a) Geotropism b) Phototropism c) Chemotropism d) Hydrotropism

7. The graph shows the average height of boys and girls in a population.

What does the graph indicate?

- a) The average height of boys is always greater than that of girls
b) The average height of girls is greater than that of boys in adulthood



- c) The average height of girls during puberty is greater than that of boys
d) The average heights of girls and boys are the same between 4 and 20 years

8. Dramatic changes of body features associated with puberty are mainly because of secretion of

- a) oestrogen from testes and testosterone from ovary
b) estrogen from adrenal gland and testosterone from pituitary gland
c) testosterone from testes and estrogen from ovary
d) testosterone from thyroid gland and estrogen from pituitary gland

In the following questions (No. 9-10) a statement of Assertion followed by a statement of Reason is given. Choose the correct answer out of the following choices. $2 \times 1 = 2$

- a) If both the assertion and the reason are true and the reason is a correct explanation of the assertion.
b) If both the assertion and reason are true but the reason is not a correct explanation of the assertion.
c) Assertion is true but reason is false. d) Assertion is false but reason is true.

9. Assertion (A) : On heating, colour of hydrated copper sulphate changes from blue to white.

Reason (R) : Copper sulphate is a crystalline salt.

10. Assertion (A) : Electric appliances with metallic body have three connections, whereas an electric bulb has a two pin connection.

Reason (R) : Three pin connections reduce heating of connecting wires.

SECTION - B

11. A compound of sodium 'X' is used in kitchen to make the 'pakoras' crispy. It is also used to remove acidity in the stomach.

a) Identify the compound 'X' and write its chemical formula.

b) What chemical reaction occurs on heating it during the cooking of food?

2

12. Give reasons for the following :

- i) Electric bulbs are usually filled with chemically inactive gases like nitrogen and argon.
- ii) Fuse wire is placed in series with the device. 2

13. How do auxins promote the growth of a tendril around a support? 2

OR

On touching a hot plate, you suddenly withdraw your hand. Which category of neurons became active first and which one next?

SECTION - C

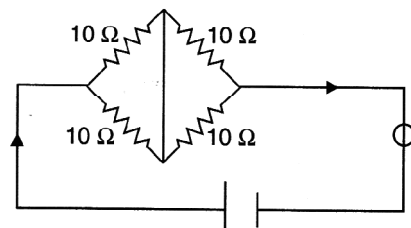
14. What is meant by water of crystallization? How many molecules of water are present in hydrated copper sulphate? Write its formula. What colour change do you observe when it is heated? 3

15. "Sodium hydrogen carbonate is a basic salt." Justify the statement. How is it converted into washing soda? Explain. 3

16. State Ohm's Law. Draw a circuit diagram to verify this law indicating the positive and negative terminals of the battery and the meters. Also show the direction of current in the circuit. 3

OR

Find the current drawn from the battery by the network of four resistors shown in the figure.



17. List in tabular form three differences in the movement of leaves of a 'Touch-me-not plant' (the plant of Mimosa family) when touched and movement of a tendril towards a support. 3

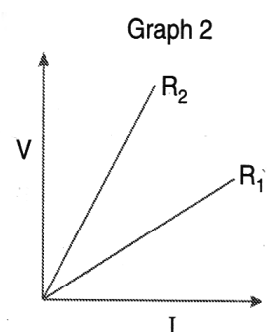
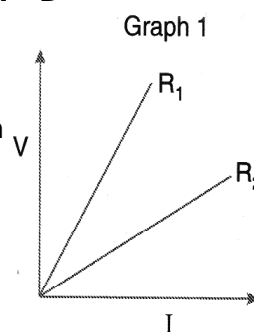
18. a) An old man is advised by his doctor to take less sugar in his diet. Name the disease from which the man is suffering. Mention the hormone due to imbalance of which he is suffering from this disease. Which endocrine gland secretes this hormone?

b) Name the endocrine gland which secretes growth hormone. What will be the effect of the following on a person :

- i) Deficiency of growth hormone?
- ii) Excess secretion of growth hormone? 3

SECTION - D

19. a) Two students perform experiments on two given resistors R_1 and R_2 and plot the following V-I graphs. If $R_1 > R_2$, which of the two diagrams correctly represent the situation on the plotted curves? Justify your answer.

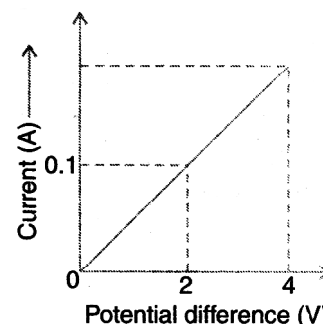


- b) An electric lamp of 24Ω and a conductor of 6Ω are connected in parallel to a 12 V battery. Calculate :
- Total resistance
 - Total current in the circuit
 - Potential difference across the conductor.

5

OR

- Calculate the resistance of the wire using the graph.
- How many 176Ω resistors in parallel are required to carry 5A and 220 V line?
- Define electric power. Derive relation between power, potential difference and resistance.



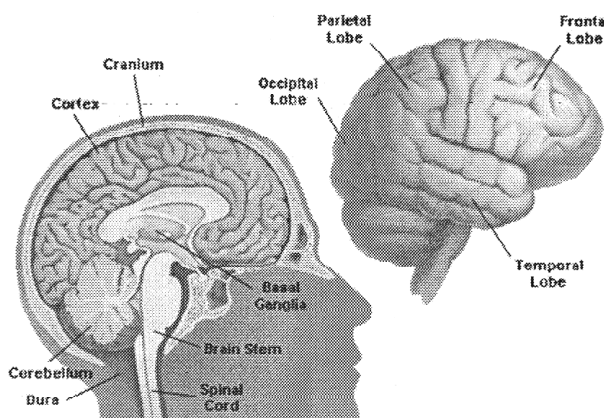
SECTION - E - (COMPETING BASED QUESTIONS)

20. Read the following and answer the questions.

$4 \times 1 = 4$

The communication between the central nervous system and the other parts of the body is facilitated by the peripheral nervous system consisting of cranial nerves arising from the brain and spinal nerves arising from the spinal cord. The brain thus allows us to think and take actions based on that thinking.

The brain has three such major parts or regions, namely the fore-brain, mid-brain and hind-brain. The fore-brain is the main thinking part of the brain. It has regions which receive sensory impulses from various receptors. Separate areas of the fore-brain are specialised for hearing, smell, sight and so on. There are separate areas of association where this sensory information is interpreted by putting it together with information from other receptors as well as with information that is already stored in the brain. Based on all this, a decision is made about how to respond and the information is passed on to the motor areas which control the movement of voluntary muscles.



- Which system facilitates the communication between the central nervous system and the other parts of the body?
- What is the role of the brain?
- What are three parts of the human brain?

OR

Which is the main thinking part of the brain?

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CLASS X

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SET B

Mark : 40

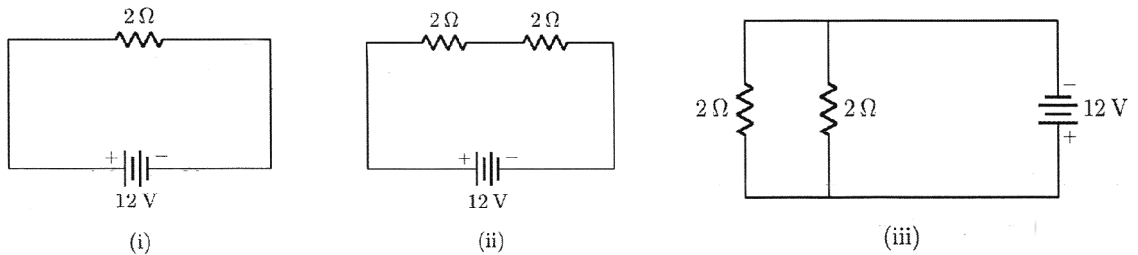
SECTION - A (OBJECTIVE TYPE)

8 × 1 = 8

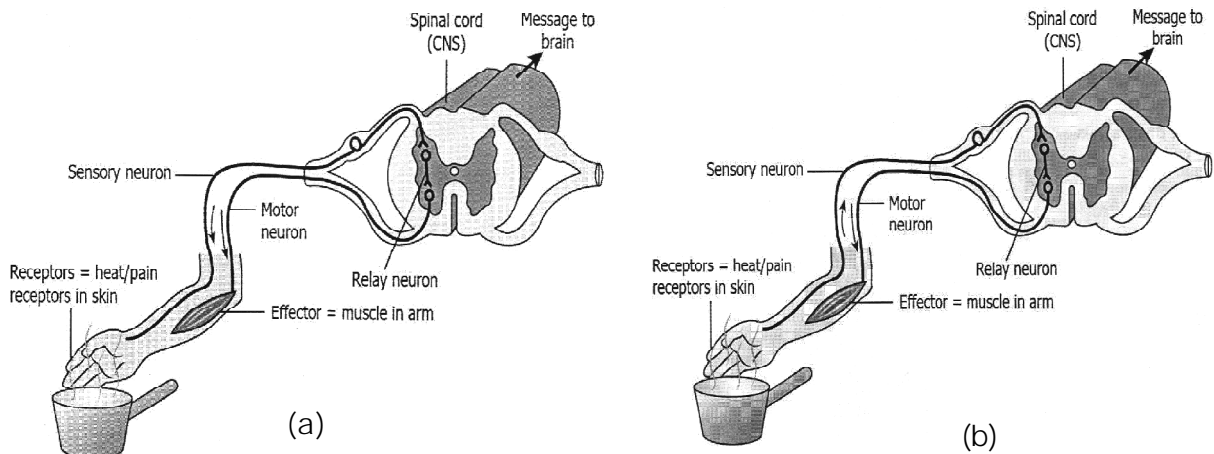
- Washing soda is obtained from carbonate.
 - Calcium
 - Sodium
 - Magnesium
 - Zinc
- When Ca(OH)_2 reacts with $\text{CO}_2(\text{g})$, it will give $\text{CaCO}_3(\text{s})$ and $\text{H}_2\text{O}(\text{l})$. The nature of CaCO_3 is
 - acidic
 - basic
 - neutral
 - All are possible
- The proper representation of series combination of cells (Figure) obtaining maximum potential is

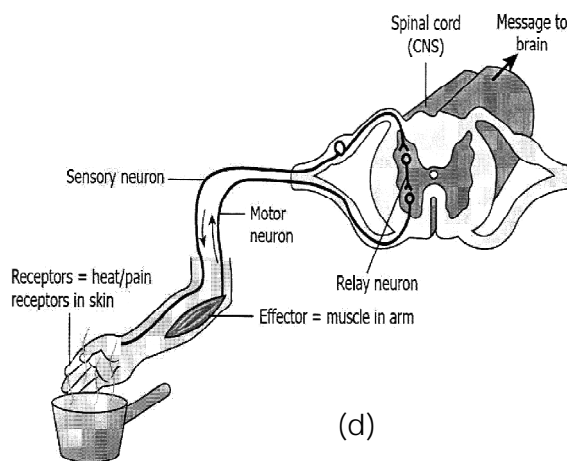
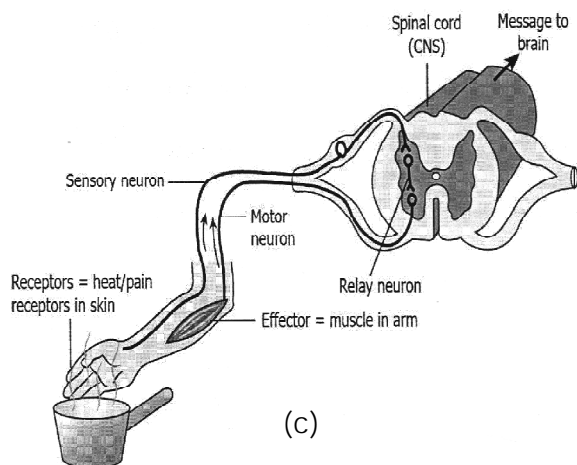


- (i)
 - (ii)
 - (iii)
 - (iv)
- In the following circuits (Figure), heat produced in the resistor or combination of resistors connected to a 12 V battery will be



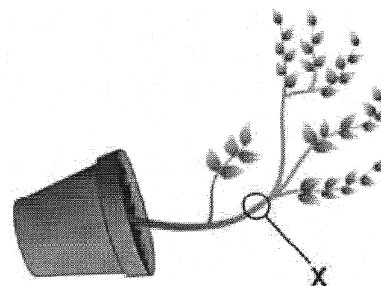
- same in all the cases
 - minimum in case (i)
 - maximum in case (ii)
 - maximum in case (iii)
- What is the minimum resistance which can be made using five resistors each of $1/5\Omega$?
 - $1/5\Omega$
 - $1/25\Omega$
 - $1/10\Omega$
 - 25Ω
 - Which option correctly shows the sequence of events that occur when we touch a hot utensil?





7. The figure shows the movement of a stem. X is a part of the stem. The movement of plant hormone auxin in cells regulates cell elongation and growth of plants in a particular direction.

How can the movement of the stem in a particular direction be described?



- A. Against gravity B. Away from touch
C. Away from chemicals D. Towards a source of water

8. A doctor advised a person to take an injection of insulin because

- a) his blood pressure was low b) his heart was beating slowly
c) he was suffering from goitre d) his sugar level in blood was high

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9. Assertion (A) : Baking soda does not creates acidity in the stomach.

Reason (R) : Baking soda is not alkaline.

10. Assertion (A) : A resistor of resistance R is connected to an ideal battery. If the value of R is decreased, the power dissipated in the circuit will increase.

Reason (R) : The power dissipated in the circuit is directly proportional to the resistance of the circuit.

SECTION - B

11. State the number of water molecules present in crystals of washing soda and plaster of Paris. What are these water molecules called as? 2

12. State the physical quantity which is equal to the ratio of potential difference and current. Define its SI unit. 2

13. i) State the function of plant hormones. Name a plant hormone which is essential for cell division.
- ii) Name the hormone which is involved in phototropism. Explain its role. **2**

OR

Write the main functions of the following :

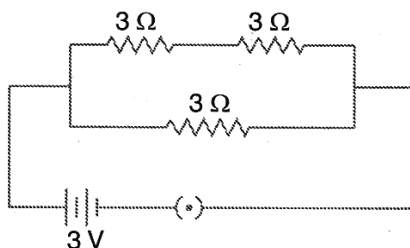
- i) Sensory neuron ii) Cranium
- iii) Vertebral column iv) Motor neuron

SECTION - C

14. Define water of crystallisation with two examples. How will you prove their existence in the examples given by you? **3**
15. i) Write the chemical formula of each of the following :
- a) Plaster of Paris b) Gypsum
- ii) How can plaster of paris be converted into gypsum?
- iii) List any one use of plaster of paris. **3**
16. A wire of length l and area of cross-section A was drawn into a wire of double its length by melting it. If its original resistivity and resistance were ρ and R respectively, what will be its new resistivity and resistance? **3**

OR

Three resistors of 3Ω each are connected to a battery of 3 V as shown. Calculate the current drawn from the battery.



17. Florist sprinkled a plant hormone to prevent wilting of leaves. Name the hormone he must have used. Give two more examples of plant hormones and also write their functions. **3**
18. a) Identify the glands that secrete :
- i) insulin ii) thyroxin
- b) Explain with an example how the timing and amount of hormone secreted are regulated in the human body. **3**

SECTION - D

19. a) Two identical resistors each of resistance 10 ohm are connected in :
- i) series, ii) parallel.
- in turn to a battery of 6 V. Calculate the ratio of power consumed by the combination of resistor in the two cases.

- b) List two factors on which the resistance of a conductor depends.
- c) Write a difference between an ammeter and voltmeter.

5

OR

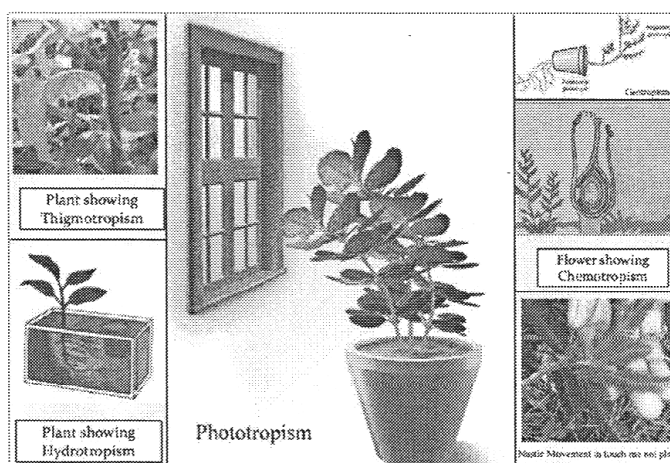
- i) A wire of resistivity p is stretched to double its length which is its new resistivity. Give reason for your answer.
- ii) Draw a schematic diagram of a circuit consisting of a battery of three cells of 2V each, a 5Ω resistor, 8Ω resistor and 12Ω resistor and a plug key all connected in series.
- iii) Two wires, one of copper and other of manganese have equal lengths and equal resistances which is thicker. (Given that resistivity of manganese is lower than that of copper).

SECTION - E - (COMPETING BASED QUESTIONS)

20. Read the following and answer the questions.

4 × 1 = 4

Nastic movements in plants are not directional movements. They are not dependent on the stimulus and are growth independent. For example, the leaves of a touch me not plant (*Mimosa pudica*), fold up immediately when touched. These kinds of changes occur due to the changes in the amount of water in the leaves. Depending on the quantity, they either swell up or shrink. Plant hormones or phytohormones are responsible for the control and coordination of plants. There are different types of hormones, which affect the growth of a plant. Phytohormones are chemical compounds which are released by stimulated cells. These hormones are diffused around the plant cells. They have a role in the cell division, cell enlargement, cell differentiation, fruit growth, falling of leaves, ripening of fruits, ageing of plants etc.



- i) Name the phenomenon called for the movement in growth of plants.
- ii) What do you mean by nastic movement?
- iii) What are the different types of hormones of plants?

OR

Which plant hormone help in the cell growth at the shoot tips by elongating the cells and help in the growth?