EDUDEVS

Upskilling Education

CLASS - X
SCIENCE
SET A

Section A

1 Mark Each

Question1: Select and write one most appropriate option out of the four options given for each of the questions 1 – 20.

1. The given figure represents a single nephron from a mammalian kidney. Identify the labelled parts, match them with the options (I-IV) and select the correct answer.

(i) The site of Ultrafiltration.

(II)Collect the urine an make it more concentrated.

(III)The main site of reabsorption of glucose an amino acids.

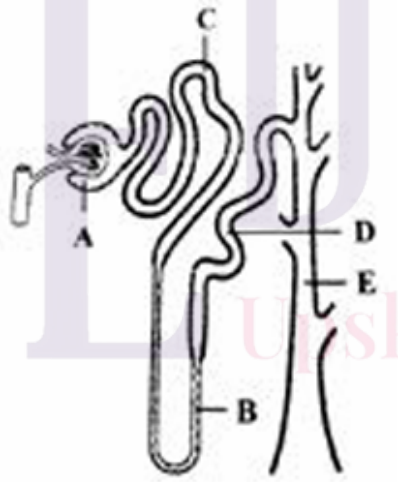
(iv) Largely responsible for the maintenance of blood pH.

(a) (i)-A, (ii)-B, (iii)-C, (iv)-D

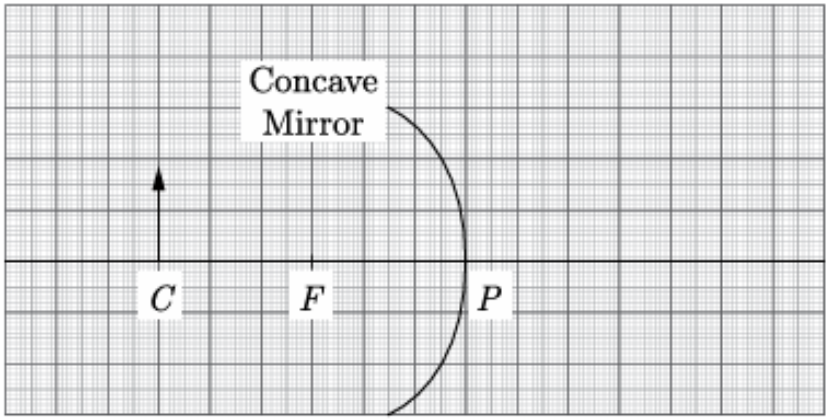
(b) (i)-A, (ii)-E, (iii)-C, (iv)-D

(c) (i)-E, (ii)-E, (iii)-D, (iv)-A

(d)(i)-B, (ii)-A, (iii)-C, (iv)-E



2.



Examine the above figure and state which of the following option is correct? (one small box in the figure is equal to 1 cm).

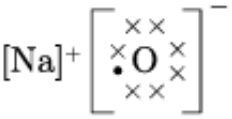
(a) The mirror has a focal length of -3 cm and will produce an image of magnification -1.

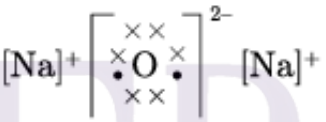
(b) The mirror has a focal length of -6 cm and will produce an image of magnification +1.

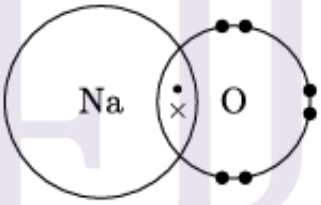
(c) The mirror has a focal length of -6 cm and will produce an image of magnification -1.

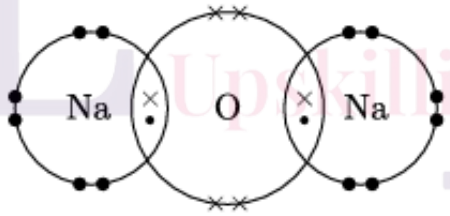
(d) The mirror has a focal length of -3 cm and will produce an image of magnification +1.

3.Which of the following is the correct electronic arrangement of sodium oxide ?

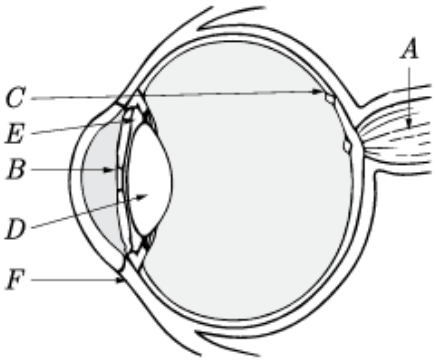
(a) 

(b) 

(c) 

(d) 

4. Different organs of human eye are labelled as A to F .



When light rays enter the eye, most of the refraction occurs at the:

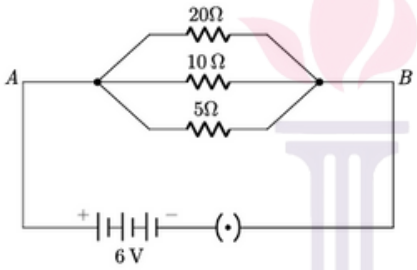
(a) part B

(b) part D

(c) part E

(d) outer surface of part F

5. Calculate the current flowing through the 10Ω resistor in the following circuit.



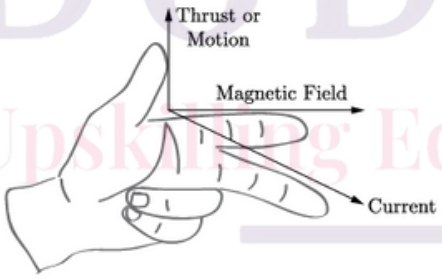
(a) 0.6 A

(b) 1.2 A

(c) 2.0 A

(d) 0.2 A

6. The image shows the Fleming's left-hand rule.



Which option explains the rule to understand the working of motor?

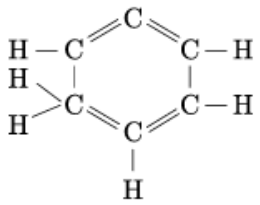
(a) When a conductor is moved inside a magnetic field, current is produced in the conductor.

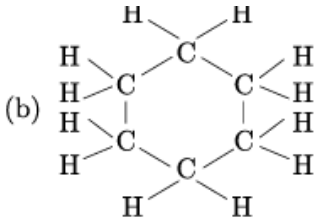
(b)When a current carrying conductor is moved with a force, it creates the magnetic field.

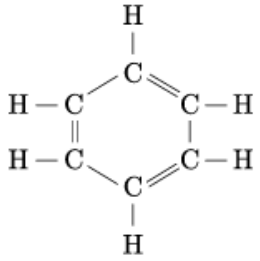
(c) When a current carrying conductor is placed in a magnetic field, it experiences a force by magnetic field.

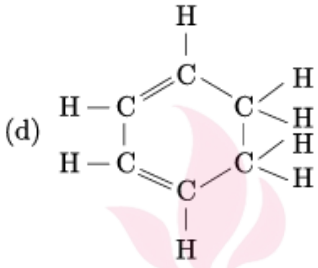
(d) When magnetic field is moved relative to the conductor, current is produced in the conductor.

7. Structural formula of benzene is :

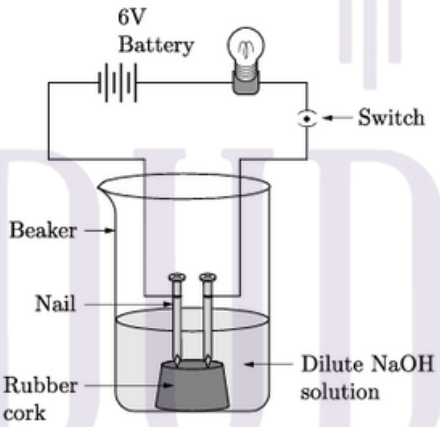
(a) 

(b) 

(c) 

(d) 

8. In an attempt to demonstrate electrical conductivity through an electrolyte, the following apparatus (Figure) was set up



Which among the following statement(s) is (are) correct?
(i) Bulb will not glow because electrolyte is not acidic.

(ii)Bulb will glow because NaOH is a strong base and furnishes ions for conduction.

(iii) Bulb will not glow because circuit is incomplete.

(iv) Bulb will not glow because it depends upon the type of electrolytic solution.

(a) (ii) and (iv)

(b) (i) and (iii)

(c) (iv) only

(d) (ii) only

9. Which of the following structures is involved in gaseous exchange in woody stem of a plant as shown in the figure?

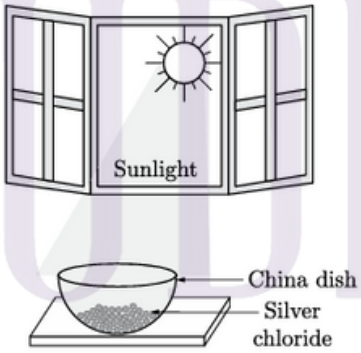
(a) Stomata

(b) Guard cell

(c) Lenticel

(d) Epidermis

10. Exposure of silver chloride to sunlight for a long duration turns grey due to



Which among the following statement(s) is(are) true?

1. the formation of silver by decomposition of silver chloride.

2. sublimation of silver chloride.

3. decomposition of chlorine gas from silver chloride.

4.oxidation of silver chloride.

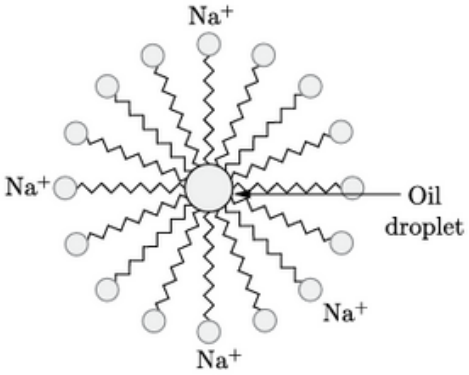
(a) Only 1

(b) 1 and 3

(c) 2 and 3

(d) Only 4

11. A soap micelle is shown in th figure. In the soap micelles



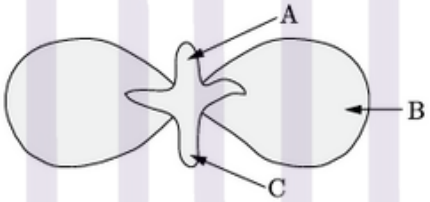
(a) The ionic end of soap is on the surface of the cluster while the carbon chain is in the interior of the cluster.

(b) Ionic end of soap is in the interior of the cluster and carbon chain is out of the cluster.

(c) Both ionic end and carbon chain are in the interior of the cluster.

(d) Both ionic end and carbon chain are on the exterior of the cluster

12. In following diagram the parts A, B and C are sequentially



(a) cotyledon, plumule and radicle

(b) plumule, radicle and cotyledon

(c) plumule, cotyledon and radicle

(d) radicle, cotyledon and plumule

13. Which of the following statement is not correct about the magnetic field?

(a) Magnetic field lines form a continuous closed curve.

(b) Magnetic field line do not interest each other.

(c) Direction of tangent at any point on the magnetic field line curve gives the direction of magnetic field at that point.

(d) Outside the magnet, magnetic field lines go from South to North pole of the magnet.

14. An object is immersed in a fluid. In order that the object becomes invisible, it should

(a) Behave as a perfect reflector

(b)Absorb all light falling on it

(c)Have refractive index one

(d) Have refractive index exactly matching with that of the surrounding fluid

15. Select the statements that describe characteristics of genes

(i) genes are specific sequence of bases in a DNA molecule

(ii) a gene does not code for proteins

(iii) in individuals of a given species, a specific gene is located on a particular chromosome

(iv) each chromosome has only one gene

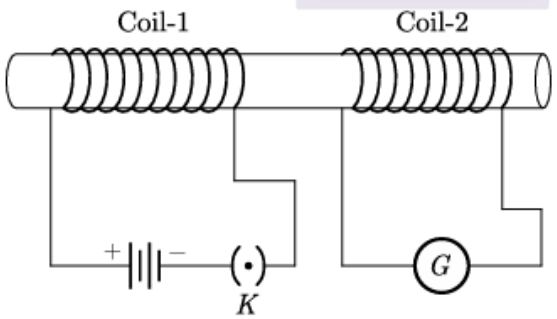
(a) (i) and (ii)

(b) (i) and (iii)

(c) (i) and (iv)

(d) (ii) and (iv)

16. In the arrangement shown in Figure, there are two coils wound on a non-conducting cylindrical rod. Initially the key is not inserted. Then the key is inserted and later removed. Then



(a) the deflection in the galvanometer remains zero throughout

(b) there is a momentary deflection in the galvanometer but it dies out shortly and there is no effect when the key is removed

(c)there are momentary galvanometer deflections that die out shortly; the deflections are in the same direction.

(d) there are momentary galvanometer deflection that die out shortly; the deflections are in opposite directions

Question no. 17 to 20 are Assertion - Reasoning based questions

17. Assertion : A reducing agent is a substance which can either accept electron.

Reason : A substance which helps in oxidation is known as reducing agent.

(a) Both Assertion and Reason are True and Reason is the correct explanation of the Assertion.

(b) Both Assertion and Reason are True but Reason is not the Correct explanation of the Assertion.

(c) Assertion is True but the Reason is False.

(d) Assertion (A) is false but reason (R) is true

18. Assertion : The 200 W bulbs glow with more brightness than 100 W bulbs.

Reason : A 100 W bulb has more resistance than 200 W bulb.

(a)Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

(c) Assertion (A) is true but reason (R) is false.

(d) Assertion (A) is false but reason (R) is true

19. Assertion (A): The transfer of pollen grains from the anther of a stamen to the stigma of a carpel is called pollination.

Reason (R): Pollination is done by insects, birds, wind and water.

(a) Both Assertion (A) and Reason are true and Reason (R) is the correct explanation of Assertion (A).

(b) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).

(c) Assertion (A) is true but Reason (R) is false.

(d) Assertion (A) is false but Reason (R) is true

20. Assertion : Quicklime reacts vigorously with water releasing a large amount of heat.

Reason : A solution of quicklime is used for whitewashing walls.

(a)Both Assertion (A) and Reason are true and Reason (R) is the correct explanation of Assertion (A)

(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

(c) Assertion (A) is true but reason (R) is false.

(d) Assertion (A) is false but reason (R) is true

SECTION-B

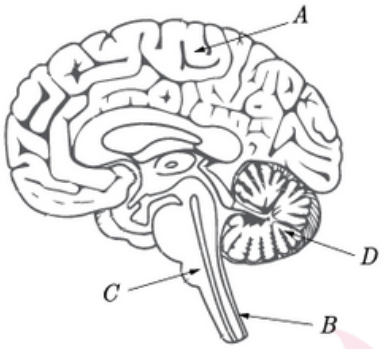
Question no. 21 to 26 are very short answer questions **2 Marks Each**

21. A person is unable to see distinctly the objects closer than 1m. Name the defect of vision he is suffering from. Draw ray diagrams to illustrate the cause of the defect and its correction by suitable lens.

or

Explain why the planets do not twinkle?

22. Name the parts A, B, C and D of human brain.



23. Name the type of mirror used in a solar furnace. How is high temperature achieved by this device ?

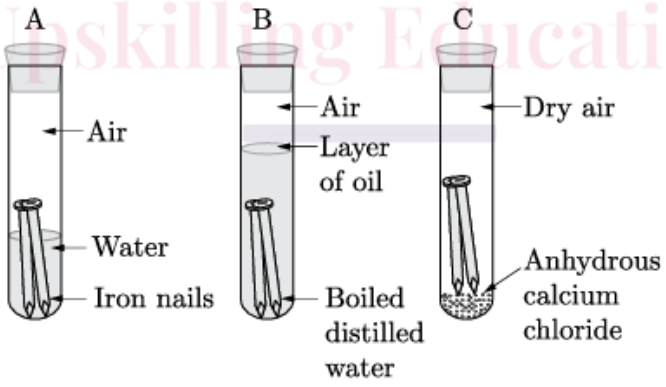
or

What is meant by refractive index ? If the speed of light in a medium is 2/3 rd of the speed of light in vacuum, find the refractive index of that medium.

24. What happens when hydrogen gas is passed over the heated copper oxide? Write the chemical equation involved in this reaction.

or

In the arrangement shown below there are three test tubes marked A, B and C. Few clean iron nails are placed in these tubes. Water is poured in test tube A, boiled distilled water and 1 mL of oil are poured in test tube B and anhydrous calcium chloride is added in test tube C



25. Write the balanced chemical equations for the following reactions and identify the type of reaction in each case.

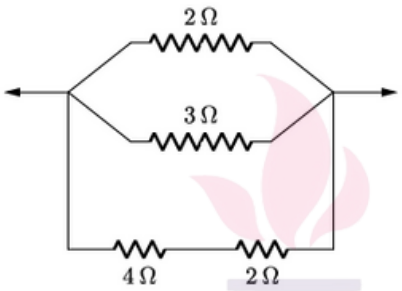
(i) Nitrogen gas is treated with hydrogen gas in the presence of a catalyst at 773K to form ammonia gas.

(ii) Ethene is burnt in the presence of oxygen to form carbon dioxide, water and releases heat and light.

or

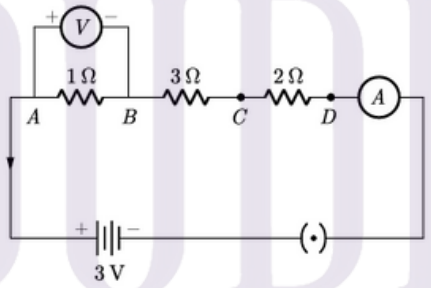
Blue litmus solution is added to two test tubes A and B containing dilute HCl and NaOH solution respectively. In which test tube a colour change will be observed? State the colour change and give its reason.

26. Calculate the equivalent resistance from the following combination of resistors.



or

What would be the readings of ammeter and voltmeter in the given circuit ?



SECTION-C

Question no. 27 to 33 are short answer questions. 3 Marks Each

27. Differentiate between a glass slab and a glass prism. What happens when a narrow beam of (i) a monochromatic light, and (ii) white light passes through (a) glass slab and (b) glass prism?

28. During electrolysis of brine, a gas G is liberated at anode. When this gas G is passed through slaked lime, a compound C is formed, which is used for disinfecting drinking water.

(i) Write formula of G and C .
(ii) State the chemical equation involved.
(iii) What is common name of compound C ? Give its chemical name.

29. (i)Draw a block diagram to show the flow of energy in an ecosystem.

(ii) In a food chain of frogs, grass, insects and snakes assign trophic level to frogs. To which category of consumers do they belong to?

30. Identify the type of reactions taking place in each of the following cases and write the balanced chemical equation for the reactions.

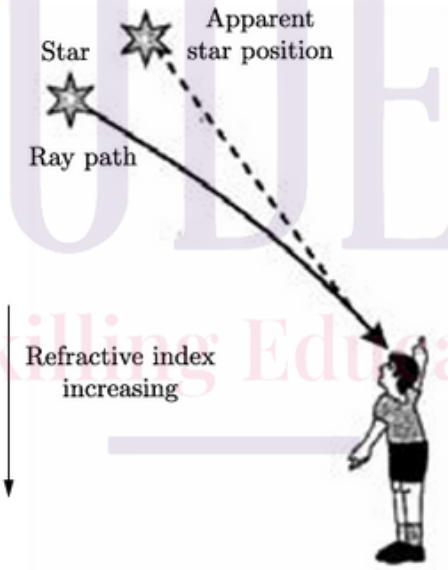
(i) Zinc reacts with silver nitrate to produce zinc nitrate and silver.

(ii) Potassium iodide reacts with lead nitrate to produce potassium nitrate and lead iodide.

31. (a) How many eggs are produced every month by either of the ovaries in a human female ? Where does fertilization take place in the female reproductive system ?

(b) What happens in case the eggs released by the ovary are not fertilized?

32. The apparent altitude of stars appears to be generally more than their true altitudes. Explain, how



33. Write one main difference between asexual and sexual mode of reproduction. Which species is likely to have comparatively better chances of survival—the one reproducing asexually or the one reproducing sexually? Give reasons to justify your answer.

SECTION-D

Question no. 34 to 36 are Long answer questions. 5 marks Each

34. (a)All ores are minerals but all minerals are not ores. Justify the statement.

(b) What is galvanisation ?

(c) Explain roasting with the help of a reaction.

(d) What do you mean by amalgam ?

or

What are alloys ? How are they made ? Name the constituents and uses of brass, bronze and solder

35. (a) Write the function of following parts in human female reproductive system :
(i) Ovary
(ii) Oviduct
(iii) Uterus

(b)Describe in brief the structure and function of placenta.

or

Define the terms :

(i) Syngamy
(ii) Triple fusion
(iii) Implantation
(iv) Placenta
(v) Gestation.

36. What is meant by magnetic force ? Name and explain the rule to determine the direction of force experienced by a current carrying conductor in a magnetic field. How does this force gets affected on :

(i) doubling the magnitude of current.

(ii) reversing the direction of current flow and

(iii) reversing the direction of magnetic field?