Class 10 science lab Skill March BOARD EXAM_JSUNIL

TEST PAPER_01 MCQ questions for class 10 science practical

1. A student adds 2 mL of acetic acid to a test tube containing 2 mL of distilled water. He then shakes the test tube well and leaves it to settle for some time. After about 5 minutes he observes that in the test tube there is :

(A) a clear transparent colourless solution (B) a clear transparent pink solution

(C) a precipitate settling at the bottom of the test tube (D) a layer of water the layer of acetic acid

Solution: Acetic acid dissolves completely in distilled water and gives a clear, colourless and transparent solution. Hence, the correct option is A.

2. A student Prepared 20% sodium hydroxide solution in a beaker to study saponification reaction. Some observations related to this are given below :

(I) Sodium hydroxide solution turns red litmus blue

(II) Sodium hydroxide readily dissolves in water

(III) The beaker containing solution appears cold when touched from outside

(IV) The blue litmus paper turns red when dipped into the solution

The correct observations are :

(A) I, II and IV (B) I, II and III (C) only III and IV (D) only I and II

Solution: Sodium hydroxide is a base. It readily dissolves in water to form an alkaline solution, which turns red litmus paper blue. When sodium hydroxide is dissolved in water, a large amount of heat is evolved, as the process is exothermic in nature. Thus, the beaker containing the sodium hydroxide solution should feel hot when touched from the outside. Hence, the correct option is D.

3. Hard water is not available for an experiment. Some salts are given below :

(I) Sodium chloride (II) Sodium sulphate (III) Calcium chloride

(IV) Calcium sulphate (V) Potassium chloride (VI) Magnesium sulphate

Select from the following group of these salts, each member of which may be dissolved in water to make it hard.

(A) I, II, V (B) I, III, V (C) III, IV, VI (D) II, IV, VI

Solution: Hard water contains sulphates, chlorides and bicarbonates of calcium and magnesium. To make water hard, calcium chloride, calcium sulphate and magnesium sulphate should be added to it. Hence, correct option is C.

4. A student identified the various parts of an embryo of a gram seed and listed them as given below :

(I) Testa (II) Plumule (III) Radicle (IV) Cotyledon (V) Tegmen

Out of these the actual parts of the embryo are :

(A) I, II, III (B) II, III, IV (C) III, IV, V (D) II, IV, V

Solution: Plumule, radicle and cotyledon are the actual parts of the embryo of a gram seed. Testa and tegmen are the parts of the seed coat. Hence, the correct option is B.

5. Four students A, B, C and D reported the following set of organs to be homologous. Who is correct ?

(A) Wings of a bat and a butterfly (B) Wings of a pigeon and a bat

(C) Wings of a pigeon and a butterfly (D) Forelimbs of cow, a duck and a lizard

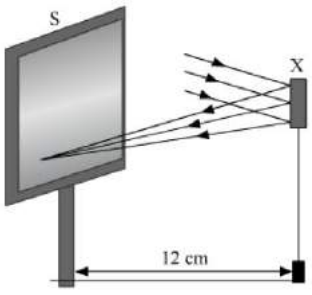
Solution: Homologous organs are the organs that have a similar origin and basic structure but different functions. Forelimbs of a cow, a duck and a lizard have a similar structure but different functions. Hence, option is D.

6. Study the following diagram and select the correct statement about the device 'X' :

(B) Device 'X' is a concave mirror of focal length 6 cm

(C) Device 'X' is a concave mirror of focal length 12 cm

(D) Device 'X' is a convex of mirror of focal length 12 cm



Solution: Because the light rays coming from infinity get reflected by the device 'X' and converge at a point at a distance 12 cm from it, the device 'X' is a concave mirror of focal length 12 cm. Hence, the correct option is C.

7. A student has obtained a point image of a distant object using the given convex lens. To find the focal length of the lens he should measure the distance between the :

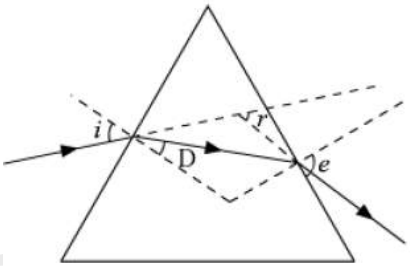
(A) lens and the object only (B) lens and the screen only (C) object and the image only

(D) lens and the object and also between the object and the image Ans: the correct option is B.

8. For students P, Q, R and S traced the path of a ray of light passing through a glass slab for an angle of incidence 40° and measured the angle of refraction. The values as measured them were 18°; 22°; 25° and 30° respectively. The student who has performed the experiment methodically is (A) P (B) Q (C) R (D) S

Solution: the correct option is C

9. After tracing the path of a ray of light through a glass prism a student marked the angle of incidence (∠*i*), angle of refraction (∠*r*) angle of emergence (∠*e*) and the angle of deviation (∠*D*) as shown in the diagram. The correctly marked angles are:



(A) ∠i and ∠r (B) ∠i and ∠e

(C) ∠i, ∠e and ∠D (D) ∠i, ∠r and ∠e

Ans: Hence, the correct option is B.

10. List two observations which you make when you add a pinch of sodium hydrogen carbonate to acetic acid in a test tube. Write chemical equation for the reaction that occurs.

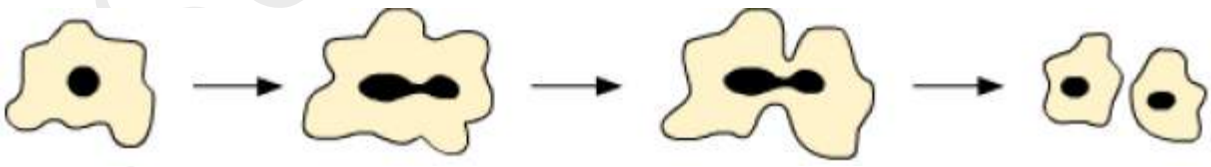
Solution: When a pinch of sodium hydrogen carbonate is added to acetic acid in a test tube, a brisk effervescence is observed due to colourless and odourless gas, which is CO_2.

Chemical equation for the reaction: $CH_3COOH(aq) + NaHCO_3(s) \rightarrow CH_3COONa(aq) + H_2O(l) + CO_2(g)\uparrow$

11. Name the type of asexual reproduction in which two individuals are formed from a single parent and the parental identity is lost. Draw the initial and the final stages of this type of reproduction. State the event with which this reproduction starts.

Solution: Binary fission is the type of asexual reproduction in which two individuals are formed from a single parent and the parental identity is lost.

Initial and Final Stages of Binary Fission



This reproduction starts with Elongation of Nucleus.

12. To find the image-distance for varying object-distances in case of a convex lens, a student obtains on a screen a sharp image of a bright object placed very far from the lens. After that he gradually moves the object towards the lens and each time focuses its image of the screen.

(a) In which direction – towards or away from the lens, does he move the screen to focus the object?

(b) What happens to the size of image – does it increase or decrease?

(c) What happen when he moves the object very close to the lens?

Solution: (a) As the student moves the object towards the lens, the position of the image shifts away from the lens. To obtain a sharp image, he should move the screen away from the lens

(b) The size of the image increases when the object is moved near the lens.

(c) When the object is placed very close to the lens, it can be considered to be placed between the focus and the optical centre. In this case, the image formed is virtual, erect and enlarged

$\Rightarrow$ (a) Away from the lens ½ (b) Increases ½ (c) No image on the screen 1

13. Study of the tendril of a pea plant and spines of Burberry shows that these structures are :

(a) Analogous (b) vestigial (c) homologous (d) retrogressive

Ans: A

14. Write the steps of procedure to study the action of acetic acid on solid sodium hydrogen carbonate in the laboratory along with the testing of gas liberated.

Ans: we should pass it from lime water if it turn milky then it is CO_2

$CH_3COOH + NaHCO_3 \dashrightarrow CH_3COONa + CO_2\uparrow + H_2O$

15. A student has to focus his compound microscope to observe a prepared slide showing different stages of binary fission in Amoeba. The steps he is likely to follow are listed below in a haphazard manner :

I. Adjust the diaphragm and the mirror of the microscope so that sufficient light may enter to illuminate the slide.

II. Fix the slide on the stage carefully.

III. Adjust the microscope to high power and focus.

IV. Adjust the microscope to low power and focus.

The correct sequence of the above steps to observe the slide under the microscope is

(A) I, II, IV, III (B) II, I, IV, III (C) II, IV, I, III (D) I, IV, II, III

Ans: (b) II, I, IV,III is the right answer. To view the slide clearly, we have to fix the slide securely. We have turned the illuminator and adjust light intensity to a midpoint position. The slide should be focused under the low focus. And then you can view it under high resolution.