Std:10 CBSE **Sub: Science** **Marks: 90**

SECTION - A

Q.1. What is meant by the meaning of periodicity of properties of elements ?

Q.2. Give one advantage of vegetative propagation.

Q.3. Write any two consequences if decomposers are removed from the ecosystem.

Q.4. Find the focal length (in cm) of a lens of power 22D. Identify the type of this lens.

Q.5. Evaluate the environmental problems caused due to large dams.

Q.6. Though the kulhads are made-up of clay which is an eco-friendly substance but their use has been discontinued in the trains now-a-days. Explain those reasons which lead to discontinuance of this practice.

Q.7. C_3H_6, C_4H_8 and C_5H_{10} belong to the same homologous series.

(i) Define homologous series.

(ii) Why the melting and boiling points of C_5H_{10} is higher than C_4H_8 ?

(iii) Arrange these hydrocarbons in order of increasing boiling points.

Q.8. An organic compound 'A' has a molecular formula C_2H_6O. 'A' on addition of oxygen gives compound 'B' which gives effervescence with baking soda.

(i) Identify 'A' and 'B'.

(ii) Write the reaction of B with baking soda.

Q.9. As we move down a group in the periodic table how does the following change :

(a) Atomic size

(b) Valency

(c) Electronegativity

Q.10. What is the basis of modern periodic table ? Why lithium with atomic number 3 and potassium with atomic number 19 are placed in group one ? What will be the atomic numbers of the first two elements in second group ?

Q.11. *(a)* What are hybrids ?

(b) Give a term for the following :

(i) Externally exhibited trait *(ii)* Traits developed by genes

Q.12. Human beings have eyes and planaria has eyespots :

(a) Give one distinguishing feature between eyes and eyespot.

(b) Name any one organism other than planaria having eyespot.

Q.13. Give three reasons for adopting contraceptive methods.

Q.14. What is the importance of DNA copying in reproduction ? Why do off-springs formed by asexual reproduction are genetically similar to their parents ?

Q.15. Give reasons in the following cases :

(a) A bacterial cell is able to survive better in hot weather conditions.

(b) Sexually reproducing organisms have more variations.

Q.16. With the help of a ray diagram explain the phenomenon of refraction of a ray through a glass prism. Mark on the diagram-angle of prism, angle of incidence, angles of refraction, emergent ray and angle of deviation.

Q.17. How is refraction different from a reflection ? Also state two laws of refraction of light.

Q.18. Eco-club of your school is organising a debate on the topic 'Nature's Fury Unleashed by Human's Greed' (Uttrakhand Disaster).

(a) List three arguments that you will use to convince the audience that humans are responsible for this disaster.

(b) List any three values that will be inculcated with this debate.

Q.19. (a) Describe an activity to show the action of soap and detergent on hard water.

(b) Name the substances where chemical salts are present in :

(i) detergent (ii) hard water (iii) soap

Q.20. Give reasons why acquired characters are not inherited. Explain with the help of example of mice.

Q.21. (a) Mention the type of method of reproduction as used by unicellular organisms. Define the method.

(b) How can the above method be classified further ?

(c) Differentiate between the process of reproduction as seen in *Amoeba* and *Leishmania*.

Q.22. An old person is unable to see the things around him clearly. The doctor said that the eye lens has become cloudy. What is this condition called ? How can it be corrected ? What will happen if the eyes are not treated ? Why do we have two eyes for vision and what difference does it make on seeing from one eye or two eyes ?

Q.23. (a) Write the laws of refraction. What is the ratio of the sine of the angle of incidence to the sine of the angle of refraction commonly known as ?

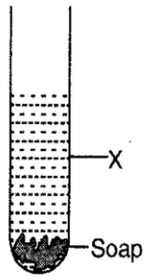
(b) What is meant by statement that refractive index of diamond is 2.42 ? If the velocity of light in air is 3×10^8 ms^{-1}, find velocity of light in diamond ?

Q.24. (a) Draw a diagram to explain how a rainbow is formed. Also state the conditions in which a rainbow is formed.

(b) Write the seven colours seen in a rainbow in increasing order of their wavelength.

SECTION - B

Q.25. Riza performed saponification reaction in a test tube. She took vegetable oil and 20% NaOH solution and stirred the mixture. After sometime soap settled at the bottom of test tube as shown :



The substance 'X' could be :

(a) glycerol (b) glycol

(c) oil (d) sodium hydroxide

Q.26. Soap is chemically :

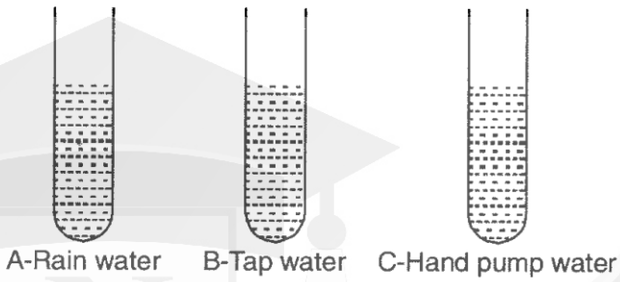
(a) mixture of aluminium salts of higher fatty acids.

(b) mixture of sodium salts of higher fatty acids.

(c) mixture of calcium salts of higher fatty acids.

(d) mixture of magnesium salts of higher fatty acids.

Q.27. Zubieda added small amount of soap in three samples of water A, B, and C as shown in figure below. She then shook the test tubes vigorously.



White curd like scum will be formed in sample(s) :

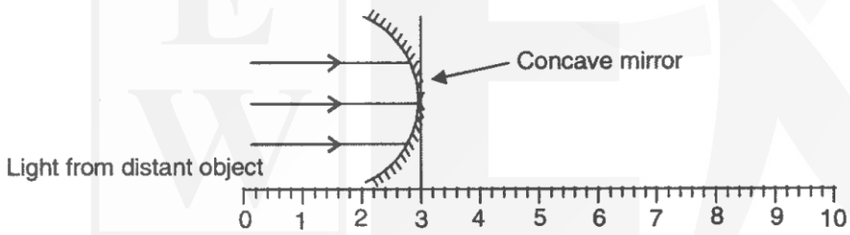
(a) A and B

(b) only C

(c) A and C

(d) A, B and C

Q.28. In the following set-up, the focal length of the concave mirror is 3 cm. The mark on the scale on which the screen be placed to obtain a sharp image would be :



(a) at 0 cm

(b) at 6 cm

(c) at 8 cm

(d) at 1 cm

Q.29. To perform an experiment of determining the focal length of a convex lens a student was provided with a convex lens of focal length between 20 cm to 25 cm. While focusing a distant object to find its focal length, he should adjust the position of the screen between :

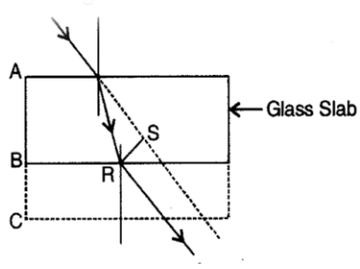
(a) 40 cm and 50 cm marks on scale from lens.

(b) 20 cm and 25 cm marks on scale from lens.

(c) 15 cm and 20 cm marks on scale from lens.

(d) 25 cm and 30 cm marks on scale from lens.

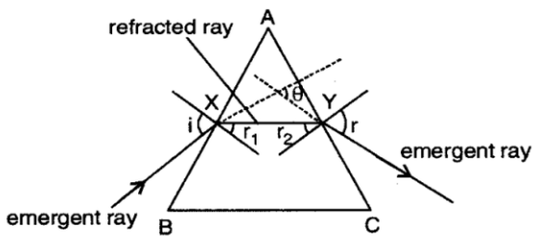
Q.30. RS represents the lateral displacement of a ray of light emerging out from a rectangular glass slab of thickness AB. If the thickness of glass slab is increased to AC, the lateral displacement will be :



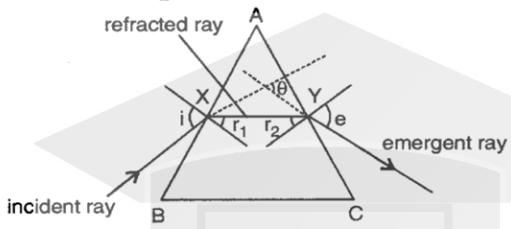
(a) zero
(b) same as RS
(c) less than RS
(d) more than RS

Q.31. Which one of the following figures has been labelled correctly ?

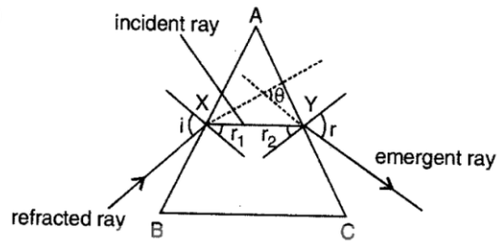
(a)



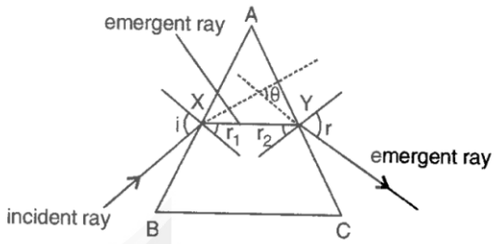
(b)



(c)



(d)



Q.32. Consider the thorn in Bougainvillea and tendril in Cucurbita. Categorized them as :

Bougainvillea

Cucurbita

(a) homologous
(b) analogous
(c) endemic
(d) adaptive

Q.33. Arrange the steps in proper sequence in order to observe the structure of a dicot seed :

(i) Soak seeds in a water filled beaker.
(ii) Transfer seeds in a wet muslin cloth for germination.
(iii) Select healthy dicot seeds.
(iv) Dissect out seed and study the structure.

(a) (i), (iv), (ii), (iii)
(b) (ii), (iii), (i), (iv)
(c) (iii), (i), (ii), (iv)
(d) (iii), (ii), (iv), (i)

Q.34. On adding acetic acid to solid sodium hydrogen carbonate in a test tube, what colour and odour of the gas evolved would be observed by a student ? Name the gas and how this gas can be tested.

Q.35. Write the various steps of the procedure of observing binary fission in amoeba.

Q.36. A student performed an experiment with convex lens and found the virtual image of an object. Find :

(a) Position of the object.
(b) Draw ray diagram for the above situation.