Class: X
Subject: Science
Topic: OASK1510103
No. of Questions: 42

Total time: 3 hrs   **Total marks: 90**

General instructions:

1. The question paper comprises of **two sections, A and B**. You are to attempt both the sections.
2. There is no overall choice. However, internal choice has been provided in all the five questions of five marks category. Only one option in such question is to be attempted.
3. All the questions of **Section-A** and **Section-B** are to be attempted separately.
4. Question numbers **1** to **3** in **Section - A** are **one mark** questions. These are to be answered in one word or one sentence.
5. Question numbers **4** to **7** in **section - A**are **two marks** questions, to be answered in about **30 words each**.
6. Question number **8** to **19** in **section-A**are **three marks** questions, to be answered in about **50 words**.
7. Question number **20** to **24** in **section-A**are **five marks** questions, to be answered in about **70 words**.
8. Question numbers **25** to **42** in **section-B** are multiple choice questions based on practical skills. Each question is a one mark question. You are to select one most appropriate response out of the four provided to you.

Section A

Q1.   Why carbon forms strong bonds with other carbon atoms, hydrogen, oxygen, nitrogen or sulphur?

Sol.   carbon atoms form many different types of compounds because each atom can form strong bonds with up to four other atoms. Also carbon has a unique property of catenation.

Q2.   List any two functions of food chain in an ecosystem.

Sol.   The food relationship among the different organisms in an ecosystem. The food chains are the living components of the biosphere

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Q3. Name the part of eye responsible for conversion of light into electrical impulses.

Sol. When light strikes the retina, millions of rhodopsin-containing rods, which are responsible for night vision, convert the light into electrical impulses, which are sent to the brain.

Q4 Write one property of hydrogen which makes it resemble with
(a) Alkali metals
(b) Halogen

Sol. (a) Like alkali metals hydrogen has one electron in its valency shell.
(b) Both Hydrogen and Halogens require one electron to complete their valence shell.

Q5. (a) Define watershed management.
(a) What are the advantages of watershed management?

Sol. (a) **Watershed management** is the study of the relevant characteristics of a watershed aimed at the sustainable distribution of its resources and the process of creating and implementing plans, programs, and projects to sustain and enhance watershed functions that affect the plant, animal, and human communities within a watershed boundary

(b) advantages :-

- To increase infiltration
- To increase water holding capacity
- To prevent soil erosion
- Method and accomplishment

Q6. (a) Where is copper-T placed?
(c) What will happen if the vas deferens in the male is blocked surgically?

Sol. (a) it is placed high in the uterus of a female
(b) If vas deferens is blocked,the sperm transfer will be prevented.

Q7. (a) What is vegetative propagation?
(d) Name the male and female reproductive part of a flower.

Sol. (a) **Vegetative reproduction** (**vegetative propagation**, **vegetative multiplication**, **vegetative cloning**) is a form of asexual reproduction in plants. It is a process by which new organisms arise without production of seeds or spores.[*citation needed*] It can occur naturally or be induced by

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horticulturists.

(b) female reproductive part-carpel
    male reproductive part-stamen

Q8.   (a) How does valency vary in a group on going from top to bottom?
        (b) How does the number of valence electrons vary in a period on going from left to right and
        from top to bottom in a group?

Sol.   (a) Valency remains same in a group as the number of valence electrons remains the same
         (b) Number of valence electrons increases from 1 to 8 in a period and remains same in a group.

Q9.   A concave lens has focal length of 25 cm. At what distance should the object from the lens be
        placed so that if it forms an image at 20 cm distance from the lens? Also find the magnification
        produced by the lens.

Sol. $f = -25\ cm$
        $v = -20\ cm$
        $\frac{1}{v} - \frac{1}{u} = \frac{1}{f}$

        $\frac{-1}{20} - \frac{1}{u} = \frac{-1}{25}$

        $-\frac{1}{u} = \frac{-1}{25} + \frac{1}{20}$

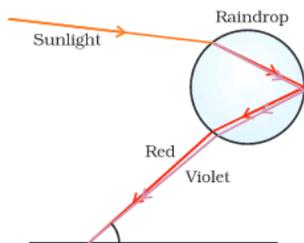 $= \frac{-20+25}{500} \qquad = \frac{5}{500}$

        $u = -100\ cm$
        $m = \frac{-v}{u} = \frac{-(-20)^4}{(-25)} = -\frac{4}{5}$

        $m = -4/5$

Q10.   Give an explanation for the formation of a rainbow.

Sol.   A rainbow is a natural spectrum appearing in the sky after a rain shower. It is caused by
        dispersion of sunlight by tiny water droplets, present in the atmosphere. A rainbow is always
        formed in a direction opposite to that of the Sun. The water droplets act like small prisms. They
        refract and disperse the incident sunlight, then reflect it internally, and finally refract it again
        when it comes out of the raindrop. Due to the dispersion of light and internal reflection,
        different colours reach the observer's eye.

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Q11. (a) How are we able to see distant and nearby objects clearly?
(b) Which part of eye helps in changing the curvature of lens?
(c) What is a blind spot?

Sol. (a) We are able to see the distant objects as well as the nearby objects clearly because our eye can focus the images of the distant objects as well as the nearby objects on its retina by changing the focal length of its lens. The focal length of the eye lens is changed by the action of ciliary muscles.
(b) ciliary muscles
(c) Blind spot is the place in the visual field that corresponds to the lack of light-detecting photoreceptor cells on the optic disc of the retina where the optic nerve passes through the optic disc.Because there are no cells to detect light on the optic disc, the corresponding part of the field of vision is invisible

Q12. How do you find the rough focal length of a convex lens? Is the same method applicable to a concave lens?

Sol. If you know the power of the lens, then the focal length would be easily available ($P = 1/f$). Otherwise, you could take an object at a distance, let the light go through the lens, and on a white screen, when you obtain a sharp image of the object, take the measurement between the screen and the lens. That will be the focal length.

Q13. On reaction with sodium hydroxide, X yielded ethanoic acid and ethanol.
(a) Give the IUPAC name of X?
(b) Name the reaction.
(c) Give a chemical reaction for the above reaction.

Sol. (a) ethyl ethanoate
(b) saponification reaction
(c) $CH_3COOC_2H_5$ +NaOH --------$\rightarrow CH_3COONa$ +C_2H_5OH --$\rightarrow$ CH_3COOH +C_2H_5OH

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Q14. (a) How is the electronic configuration of an element related to its position in the modern periodic table? Give one example.
(b) Why is nitrogen more electronegative than phosphorus?

Sol. (a) The way electrons fill the shells, subshells, and orbitals is called the electron configuration of the element. Configurations of elements in a period are similar in that their ions have the same configuration of the noble gas in that period.
Eg Li and Na lie in the same period. Their ions then should have the same configuration of the noble gas in that period which is true in this case.
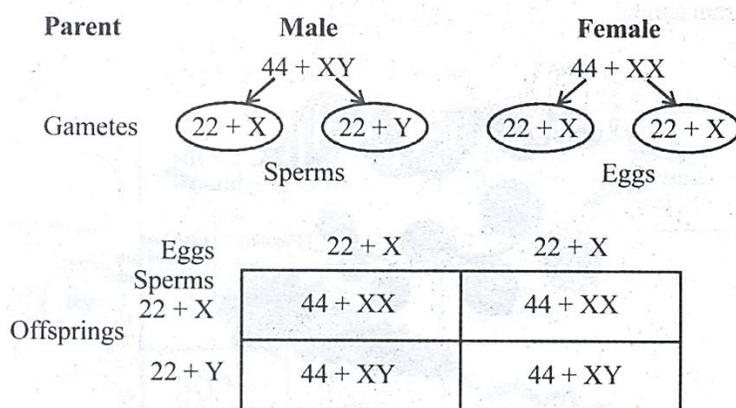Li (2,1) -→ Li$^+$ (2) which resembles He
Na (2,8,1) -→ Na$^+$ (2,8) which resembles Ne

(b) a nitrogen atom is smaller, so that a newly added electron is closer to the attractive positive charge of the nucleus than it would be in a phosphorus atom.

Q15. We hear and read about female foeticide, which is really a wrong practice. In some families, be it rural or urban, females are tortured for giving birth to a girl child. They do not seem to understand the scientific reason behind the birth of a boy or a girl. In your opinion, the approach of the society towards mother in this regard is correct or not? Explain the scientific reason.

Sol. No, the approach of society towards mother in this regard is not correct as In human sex is predetermined in the sperm gamete. The egg gamete mother cell is said to be homogametic because all its cells possess the XX sex chromosomes, sperm gametes are said to be heterogametic because around half of them contain the X – chromosome and other possess the Y – chromosome to compliment the first X – chromosome.
Hence, there are two possibilities that can occur during fertilization between male and female gametes, XX and XY. Since, sperm are the variable factor, i.e., which sperm will fertilize the egg, the one carrying X – chromosome or the carrying the Y- chromosome.

Parent		Male		Female	
		44 + XY		44 + XX	
Gametes		22 + X	22 + Y	22 + X	22 + X
			Sperms		Eggs

Offsprings	Eggs Sperms	22 + X	22 + X
	22 + X	44 + XX	44 + XX
	22 + Y	44 + XY	44 + XY

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Q16. (a) If a purple flowered pea plant (PP) is crossed with a white flowered pea plant (pp), will we have white flowered pea plant in F1 generation? Why or why not?
(b) What do you mean by dominant and recessive trait?

Sol. (a) All flower will be purple as it is dominant*.the genotype will be Pp. "P indicate dominant variety and p indicate recessive one now in F1 The offspring will be Pp, hence dominant shows its characters and all flowers are purple."

(b) **Dominance** in genetics is a relationship between alleles of one **gene**, in which the effect on phenotype of one allele masks the contribution of a second allele at the same locus. The first allele is **dominant** and the second allele is **recessive**.

Q17. Define the following terms:
(a) Genetic drift
(b) Heredity
(c) Analogous organs

Sol. (a) **Genetic drift** (or allelic **drift**) is the change in the frequency of a gene variant (allele) in a population due to random sampling of organisms. The alleles in the offspring are a sample of those in the parents, and chance has a role in determining whether a given individual survives and reproduces.

(b) **Heredity** is the passing of phenotypic traits from parents to their offspring, either through asexual reproduction or sexual reproduction. This is the process by which an offspring cell or organism acquires or becomes predisposed to the characteristics of its parent cell or organism.
c) Analogous structures are ones that basically have the same function but not the same underlying structure.
Examples: Bat's wing & Fly's wing- they both are used to help the creature fly, but they have diff patterns in bone structure.
The similarity of the function also reflects that they are adapted to a similar environment!

Q18. What are fossils? What do they tell about the process of evolution?

Sol. Fossils are remains or impressions of ancient creatures, some of which represent lineages now extinct, and others from which existing species evolved.
Fossils indicate evolution occurred as they detail variations in bone structures of related animal species, and in plant forms and structures. Radioisotope dates of rock strata demonstrate how plants and animals changed over time. Fossils also reveal how the climate of an area in which the animal or plant lived in changed over of time and how the animal or plant adapted to its environment.

Q19. Explain why:
(a) Scrotum remains outside the body of human males.
(b) Petals of flowers are variously coloured.
(c) Some plants are propagated only by vegetative methods.

Sol. (a) The scrotum lies outside of the body between the thighs, exposing the testes to a lower temperature than the rest of the body. This lower temperature is necessary for the adequate maturation and development of sperm (spermatogenesis).

(b) They are variously coloured as the main function of the petals is to attract files you help in transfer of pollen grain from another to pistil.

(c) It is the only means of reproduction in specie's which are seedless or which usually do not produce viable seeds, such as banana, figs, pineapple, and chrysanthemum.

Q20. (a) Why magnification is taken negative for real images and positive for virtual images?
(b) Why a convex mirror is used as rear-view mirror in vehicles?
(c) Power of convex lens is 4.5 D. Find its focal length.

Sol. (a)

(i) real image = positive magnification
(ii) virtual image = negative magnification
(iii) upright/errected = positive magnification
(iv) inverted/upside down = negative magnification.

In case of real objects, the real images are upside down and virtual images are upright. Magnification is defined as the height of image / height of the object so its is negative for real images. do is the distance of the object from the lens, and it is positive if the object is in front of the lens. di is the distance of the image, and it is positive if the image is behind the lens. The magnification is hi/ho=-di/do.
You never get real image with a diverging lens from a real object, but you can have one if the object is supplied by another lens. For (b), the image is real, so di is positive, the image is behind the lens. It is erect, so the magnification is positive. So m=1,5=-di/do. As di >0 do must be negative, the object is not real.

(b) Convex mirror is used as rear view mirrow as it gives a clear diminished and an erect image of the traffic that is behind .It covers a wide range of the traffic behind you and gives a very clear image.
If we are using a concave mirror. Everything behind us will be enlarged and tilted from the original position and we cant see the actual traffic behind you . Even a plain mirror is

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not used as it does not cover a wide surface for the traffic.
Hence, a convex mirror is used.

(c) power = 1/f
use this formula to get the answer with proper sign convention

OR

(a) Find the size, nature and position of image formed when an object of size 1 cm is placed at a distance of 15 cm from a concave mirror of focal length 10 cm.
(b) Why does light travel faster in water in comparison to kerosene? (Refractive index of water and kerosene are 1.33 and 1.44 respectively)

Sol.   (a)
$$\frac{1}{v} + \frac{1}{u} = \frac{1}{t}$$

$$\frac{1}{v} = \frac{1}{-10} + \frac{1}{15}$$

$$\frac{1}{v} = \frac{-5}{10 \times 15}$$

$$m = \frac{-v}{u} = \frac{+30}{-15} = -2$$

$h_i = -2h_o$
$h_i = -2 \, cm$
$v = -30 \, cm$
Image will be 2 cm inverted and real image.

(b) It is because has less refractive index and we know that refractive index is inversely proportional to the speed of light in that medium, Refractive index in a medium = speed of light in air / speed of light in that medium. Hope this helps!!!!!

Q21.   (a) Define:
 (i) Centre of curvature of a spherical mirror
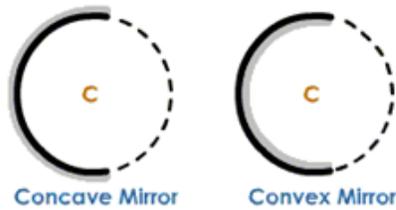 (ii) Pole of a spherical mirror
(b) State the mirror formula and its magnification.
(c) Using same find the distance at which an object should be placed for getting a real and inverted image at 45 cm using a concave mirror of focal length 20 cm.

Sol.   (a)

(i)   Centre of Curvature is the centre of the sphere of which the spherical mirror forms a part. It is denoted by the letter C.

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Concave Mirror   Convex Mirror

(ii)   Pole is the midpoint of the aperture of the spherical mirror. It is representing by the letter P.

Concave Mirror   Convex Mirror
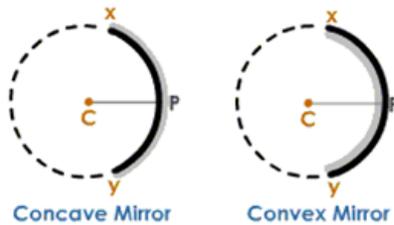
Midpoint of xy

(b) In a Spherical Mirror,

The distance of the object from its pole is called the Object distance (u). The distance of the image from the Pole of the Mirror is called the image distance(v)

The distance of the principal focus from the pole of the mirror is called the Focal length (f).

There is a relationship between these three quantities given by the mirror formula,

$$\frac{1}{u} + \frac{1}{v} = \frac{1}{f}$$

Magnification:

It can be defined as the ratio of the height of the image to the height of the object. It is usually represented by the letter m.

m = $\dfrac{\text{Height of the image (h')}}{\text{Height of the object (h)}}$ --- (10.2)

Magnification can be related to object distance (u) and the image distance (v). It can be expressed as

Magnification (m) = $\dfrac{h\prime}{h} = \dfrac{-v}{u}$ $-------------$ (10.3)

A Negative sign in the value of the magnification indicates that the image is real

A positive sign in the value of the magnification indicates that the image is virtual.

(c)

$$\frac{1}{v} + \frac{1}{u} = \frac{1}{t}$$

$$\frac{1}{45} + \frac{1}{u} = \frac{-1}{20}$$

$$\frac{1}{u} = \frac{1}{45} - \frac{1}{20}$$

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$$\frac{1}{u} = \frac{-25}{20 \times 45}$$

$$u = -36 \, cm$$

Or

(a) A concave lens has focal length of 20 cm. At what distance from the lens should a 5 cm tall object be placed so that it forms an image at 15 cm from the lens? Also calculate the size of the image formed.

(b) A ray of light passing through centre of curvature of a spherical mirror retraces its path on reflection from the mirror. Why?

Sol.   (a)

$$\frac{1}{v} + \frac{1}{u} = \frac{1}{t}$$

$$\frac{1}{u} - \frac{1}{15} = -\frac{1}{20} \qquad\qquad \frac{1}{u} = \frac{1}{15} - \frac{1}{20}$$

$$\frac{1}{u} = \frac{5}{20 \times 15}$$

$$u = 60$$
$$m = \frac{h_i}{h_o} = \frac{-v}{u}$$

$$\frac{h_i}{h_o} = \frac{-15}{-60}$$

$$h_i = 4\,h_o \Rightarrow h_i = 20 \, cm$$

(b) A ray of light passing through the centre of curvature of a concave mirror gets reflected along the same path because when ray of light passes through centre of curvature of a concave mirror it strikes the mirror at 90 degree that is incident ray coincides normal therefore angle of incidence = 0 so, according to law of reflection angle of reflection = 0 thus ray of light retraces its path

Q22.   (a) What is genetics?
(b) Give the common name of the plant on which Mendel performed his experiments.
(c) For what did Mendel used the term factor and what are these factors called now?
(d) What are genes? Where are genes located?

Sol.   (a) **Genetics** is the study of genes, heredity, and **genetic** variation in living organisms. It is generally considered a field of biology, but it intersects frequently with many of the life sciences and is strongly linked with the study of information systems.
(b) Common garden pea plant
(c) Factors were used by mendel for genes, these are nowdays called by genes only

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(d) A **gene** is a locus (or region) of DNA that encodes a functional RNA or protein product, and is the molecular unit of heredity.[Genes is located in a chromosomes

Or

(a) What is Natural Selection? Explain.
(b) Why are thorns of Bougainvillea plant and a tendril of Pass flora plant considered? homologous organs?

Sol.   (a) The theory states that organics evolution occurs through natural selection and accumulation of inheritable variations which provide structural and functional superiority to some individuals over others in their survival and reproduction. The important features of the theory are as follows:

   (iii)   Over – Production: - Organisms have a very high reproductive potential, producing a very large number of offspring.
   (iv)   Limited food and Space: - There is limitation of food and space of earth. Therefore, populations of different species cannot increases beyond a certain limit.
   (v)   Struggle for existence: - There is a competition amongst organism to obtain optimum resources. The competition is maximum amongst member of the same species , i.e, interspecific competition
   (vi)   Variation: - A large number of variations occur in size, structure, physiology and behavior of individuals of a species. The variations are of three types – useful, neutral and harmful.
   (vii)   Natural Selection (Survival of the Fittest): - In the struggle for existence, only those individuals survive and reproduce which have the most useful variations.
   (viii)   Inheritance of useful Variations: - Inddividuals with useful variations reproduce and transfer the variations to the next generation. Next generation repeats the process of formation of new variations and natural selection. There is, therefore, a continuous selection
   (ix)   Formation of new species: - Accumulation of variation produces a completely new species.

   (b) It show the organs which perform different functions but have similar basic structure – they are homologous organs

Q23.   (a) What is placenta? Discuss two functions of placenta.
       (b) Give two examples each of:
       (i) Sexually transmitted bacterial infections
       (ii) Sexually transmitted viral infections

Sol.   (a) The placenta (also known as afterbirth) is an organ that connects the developing fetus to the uterine wall to allow nutrient uptake, waste elimination, and gas exchange

via the mother's blood supply, fight against internal infection and produce hormones to support pregnancy.
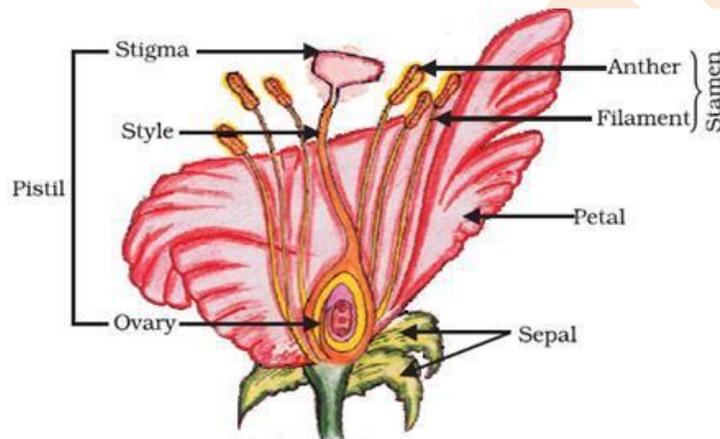
FUNCTIONS:-

* The placenta provides oxygen and nutrients to growing babies
* It removes waste products from the baby's blood

(b) (i) gonorrhea
   (ii) HIV/AIDS

Or

(a) Draw a neat labelled diagram of longitudinal section of flower.
(b) Write two points of difference between self and cross-pollination.

Sol.   (a)

	Self-pollination	Cross-pollination
1	Here pollen is transferred from the stamen to the stigma of the same flower.	Here pollen is transferred from the stamen of one flower to the stigma of another flower.

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Q24.   (a) Which property of carbon leads to formation of large number of compounds? Define it?
    (b) What is the functional group in the following molecules?
    i. $CH_3CH_2CH_2OH$

$$CH_3-\overset{\displaystyle O}{\overset{\|}{C}}-OH$$
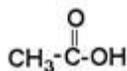
    ii.
    (c) Which of the following formula represents a saturated hydrocarbon?

$$C_nH_{2n}, C_nH_{2n+1}, C_nH_{2n+2}, C_nH_{2n-2}$$
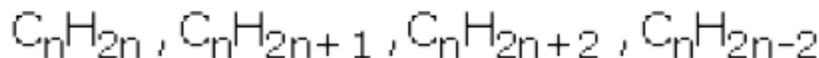
    (d) What happens when methane is burnt in oxygen?
    (e) Why is the conversion of ethanol to ethanoic acid an oxidation reaction?

Sol.   (a) Catenation property. **Catenation** is the linkage of atoms of the same element into longer chains. **Catenation** occurs most readily in carbon, which forms covalent bonds with other carbon atoms to form longer chains and structures. This is the reason for the presence of the vast number of organic compounds in nature.
    b)(i) –OH (alcohol)
    ii) –COOH (acid)
    (c) C_nH_{2n+2}
    (d) Combustion of methane produces heat energy which is used as a fuel.
    $CH_4 +2O_2 \rightarrow CO_2 +2 H_2O$
    (e) The **conversion of ethanol** into **ethanoic acid** is called an **oxidation reaction** because oxygen is added to it during this **conversion**.

Or

    (a) Give three points to distinguish between alkenes and alkynes.
   (b) Explain the mechanism of cleaning action of detergents.

Sol.   (a) Alkenes are hydrocarbons (compounds containing only C and H) that have one or more C=C double bonds (two C atoms are linked by 4 shared electrons). The general formula is CnH_2n, which is two hydrogen atoms less than the corresponding alkane.

    Alkynes are hydrocarbons (compounds containing only C and H) that have one or more triple bonds (two C atoms are joined by 6 shared electrons). The molecular formula fits the formula CnH2n-2 and has therefore four hydrogen atoms less than the corresponding alkane.

    (b)Detergents are emulsifying agents that are very similar to soap but they do not have a biological origin and they do not have a carboxylate group instead of it they have sulphonate

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group as they are sodium salt of long chain sulphonic acid. Synthetic detergents usually have a long hydrocarbon chain with between 12 and 20 carbon atoms. At the head of this chain of this chain there is a polar group that is a strong hydrogen bonder to water but does not from strong ionic bonds with the ions of hard water.

- The salts of fatty acids have an ionic polar head group, the carboxylate and a long non – polar hydrocarbon chain.
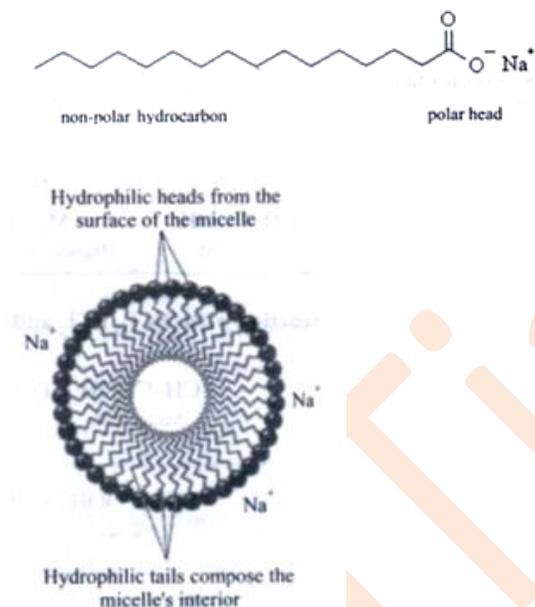
- The polar group is hydrophilic (i.e., water – loving), the non – polar portion is hydrophobic (i.e., water – hating) or lipophilic.
- The hydrophobic tails (hydrocarbon chain)will attach themselves to any substance which is non – polar (grease). The tails surround the grease with the polar heads in the aqueous phase, forming the structure shown. With agitation the grease is pulled from the clothing allowing the grease to be completely surround and move into the aqueous phase. This is them washed away leaving only clean clothes behind.

Section B

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Q25. On reacting $NaHCO_3$ and acetic acid, the gas evolved turns:
(a) Lime water milky
(b) Water milky
(c) Kerosene milky
(d) Acidified $K_2Cr_2O_7$ solution milky

Sol. (a)

Q26. Which of the following compound can turn blue litmus solution red?
(a) NaOH
(b) CH_3CHO
(c) CH_3OCH_3
(d) CH_3COOH

Sol. (d)

Q27. The reaction between ethanoic acid with $NaHCO_3$
(a) Is very slow
(b) Is vigorous and produce a lot of effervescence
(c) Gives pungent smell
(d) Gives out gas which burns with a pop sound.

Sol. (b)

Q28. In yeast cell, during budding there can be:
(a) Single bud
(b) Two buds
(c) Three buds
(d) Chain of buds

Sol. (d)

Q29. Binary fission starts in an amoeba with the:
(a) Constriction of its cell membrane
(b) Elongation of its nucleus
(c) Two amoebae come closer
(d) Both (b) and (c)

Sol. (a)

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Q30. A sharp image of distant object is obtained on a screen by using convex lens. In order to determine the focal length of the lens you need to measure the distance between the:
(a) Lens and the object
(b) Lens and the screen
(c) Object and the screen
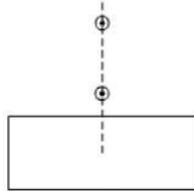(d) Lens and the screen and also object and the screen.

Sol. (d)

Q31. Select from the following the best set-up for tracing the path of a ray of light through a rectangular glass slab:
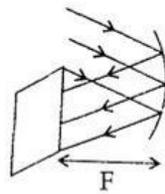(a)

(b)

(c)

(d)

(a) I
(b) II

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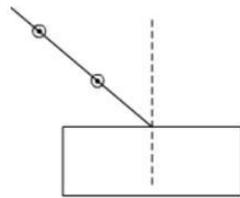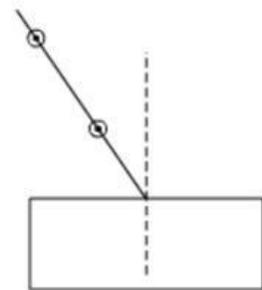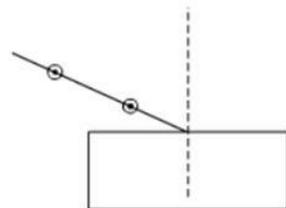
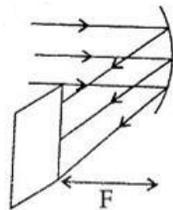(c) III
(d) IV

Sol.   (d)

Q32.   The image formation, when rays from a distance object fall on a concave mirror is correctly depicted in the ray diagram:
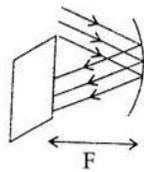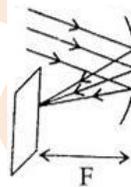
(a)

(b)

(c)

(d)

(a) A
(b) B
(c) C
(d) D

Sol.   (d)

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Q33. A student soaked 12 g of raisins in 60 mL of distilled water in two beakers A and B each. She maintained beaker A at 200C and beaker B at 400C after an hour. The percentage of water absorbed will be:
(a) The same in both A and B
(b) More in A than B
(c) More in B than in A
(d) Exactly twice as much as in B as in A

Sol. (c)
temperature causes a marked increase in the rate of osmosis

Q34. Raisins absorb water by:
(a) Exosmosis
(b) Endosmosis
(c) Plasmolysis
(d) Diffusion

Sol. (b)
Movement of water from high to low concentration across semipermeable membrane is known as endosmosis.

Q35. The water absorbed by raisins is calculated as:
(a) Weight of wet raisins – weight of dry raisins.
(b) Weight of dry raisins – weight of wet raisins.
(c) Weight of water in Petridis – weight of wet raisin.
(d) Weight of dry raisins + weight of wet raisins.

Sol. (a)
weight of resins will be deducted by this method.

Q36. A blue litmus paper was first dipped in dilute HCl and then in dilutes NaOH solution. It was observed that the colour of litmus paper:
(a) Changed first to red then to colourless
(b) Changed first to red then to blue
(c) Changed blue to colourless
(d) Remained blue in both solutions

Sol. (b)

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Q37. When the ray light is going from denser to rarer medium, the angle of refraction is always:
(a) Smaller than the angle of incidence
(b) Equal to the angle of incidence
(c) Greater than the angle of incidence
(d) Can by any depending upon the material of the denser medium

Sol.   (c)

Q38. If a glass rod is immersed in a liquid of the same refractive index, it will:
(a) Appear to be longer
(b) Appear to be shorter
(c) Appear to be thicker
(d) Disappear

Sol.   (b)

Q39. A colourless and odourless gas is liberated when hydrochloric acid is added to a solution of washing soda. The name of the gas is:
(a) Carbon dioxide
(b) Nitrogen dioxide
(c) Sulphur dioxide
(d) Sulphur trioxide

Sol.   (a)

Q40. The process which is used to prepare soap is known as:
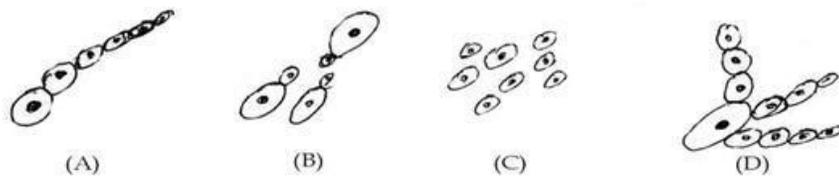(a) Saponification
(b) Hydrolysis
(c) Combustion
(d) Decomposition

Sol.   (a)

Q41. Find out the correct relation

(a) f = R/4 , $\frac{1}{v} + \frac{1}{u} = \frac{1}{f}$
(b) f = 2R , $m = -\frac{v}{u}$
(c) $R = \frac{f}{3}$, $\frac{1}{v} - \frac{1}{u} = \frac{1}{f}$
(d) None of these

Sol.   (d)

Q42. The diagram which does not illustrate budding in yeast is

(a) A
(b) B
(c) C
(d) D

Sol. (c)