CBSE Sample Paper-05 (solved)
SUMMATIVE ASSESSMENT –II
SCIENCE (Theory)
Class – X

Time allowed: 3 hours Maximum Marks: 90

General Instructions:

a) All questions are compulsory.
b) The question paper comprises of two sections, A and B. You are to attempt both the sections.
c) Questions 1 to 3 in section A are one mark questions. These are to be answered in one word or in one sentence.
d) Questions 4 to 6 in section A are two marks questions. These are to be answered in about 30 words each.
e) Questions 7 to 18 in section A are three marks questions. These are to be answered in about 50 words each.
f) Questions 19 to 24 in section A are five marks questions. These are to be answered in about 70 words each.
g) Questions 25 to 27 in section B are 2 marks questions and Questions 28 to 36 are multiple choice questions based on practical skills. Each question of multiple choice questions is a one mark question. You are to select one most appropriate response out of the four provided to you.

Section A

1. Name the product formed beside soap that is obtained during saponification process.
2. Are the laws of reflection applicable to plane surfaces also valid for curved surfaces?
3. Write a food chain in a forest ecosystem.
4. What discrepancies were there in Mendeleev's Periodic Table?
5. Name one organ analogous to the wing of the bird. Why are they both analogous? Can you include the wing of bat also with them under the same category? Give reason.
6. In what S.I. unit is power of lenses rated? A convex lens has a focal length of 50 cm, Calculate its power.
7. What is electron affinity? The electron affinity values of three elements A, B and C of a group are 324, 295 and 333 kJ mol^{-1}. Arrange these in increasing order of their atomic numbers.
8. The atomic number of an element is 16. Predict its:
   (a) valency (b) group number (c) whether it is a metal of non-metal
   (d) nature of the oxide formed (e) name of the element.
9. Differentiate between 'Self pollination' and 'Cross pollination'. Describe double fertilization in plants.
10. (i) When does ovulation occur during the menstrual cycle in a normal healthy female?
    (ii) Draw a labelled diagram to show the reproductive system of a human female.

11. How are fossils formed?
12. Explain Mendel's experiment with peas on inheritance of traits considering only one visible contrasting character.
13. An object of size '*l*' cm is placed in front of a (i) convex mirror and (ii) concave mirror. With a neat ray-diagram, explain how an erect image is formed.
14. (i) Is the speed of light a constant?
    (ii) Which colour has the greatest speed in the visible region?
    (iii) Is it possible to combine the seven colours in the spectrum to form white?

15. Sheeba studies in grade 9 and is a secretary of school's club. As per practice in the school, all members of science club assemble in Physics lab in last two periods on every Friday.
    Sheeba also extends help to her mother in kitchen. One day she observed that the apparent random wavering or flickering of objects seen through a turbulent stream of hot air rising above the fire in the kitchen. She discussed about this with her friends and decided to raise the question in school's science club meeting.
    Read the given passage and answer the following questions:
    (a) Explain the reason behind the observation.
    (b) Name the similar phenomenon on a larger scale. Also, draw the ray diagram.
    (c) What values are shown by Sheeba?

    [Value Based Question]
16. Draw a neat labelled diagram of human eye.
17. "Vegetarian food habits can sustain a larger number of people." Justify the statement in terms of food chain.
18. List any three measures of the projection of wildlife.
19. Give five differences between diamond and graphite.

Or

(a) A compound X is formed by the reaction of carboxylic acid having the molecular formula $C_2H_4O_2$ and alcohol (Y) in the presence of conc. H_2SO_4. The same carboxylic acid is obtained by the oxidation of alcohol (Y). Name the compounds X and Y. Give the chemical equation for the reaction.

20. (a) Which hydrocarbons burn with
        (i) non-sooty blue flame (ii) sooty yellow flame
    (b) What happens when methane reacts with chlorine?
    (c) What is rectified spirit?
    (d) Why does soap not work in hard water?
    (e) What is glacial acid?

Or

(a) What is hydrogenation? Give one reaction. What is its industrial application?
(b) What is esterification?

21. Describe the human female reproductive system with the help of a labelled diagram.

Or

Describe the process of fertilization in the human female.

22. Discuss in brief the various modes of reproduction used by single organisms.

Or

Explain with example how characteristics of a population changes over the years for the following situations:
(a) To gain survival advantage.
(b) Due to accidental survival.
(c) Temporary change of characteristics.

23. A square wire of side 3.0 cm is placed 25 cm away from a concave mirror of focal length 10 cm. What is the area enclosed by the image of the wire? The centre of the wire is on the axis of the mirror, with its two sides normal to the axis.

Or

A small candle 2.5 cm in size is placed 27 cm in front of a concave mirror of radius of curvature 0.36 m. At what distance from the mirror should a screen be placed in order to receive a sharp image? Describe the nature and size of the image. If the candle is moved to the mirror, how would the screen have to be moved?

24. Draw a labelled diagram which shows th refraction of light through a triangular glass prism. Mark the:
(i) Angle of deviation (ii) Angle of emergence (iii) Angle of prism

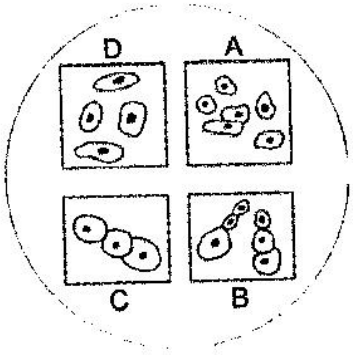
Or

Give some points of similarities and dissimilarities between a camera and a human eye.

Section B

25. (i) When acetic acid reacts with ethyl alcohol, we add conc. H_2SO_4. It acts as _____ and the process is called _____.
(ii) Write the chemical equation for the same.

26. (i) A student observed a slide of yeast under a microscope and saw collection of cells in different parts of the slide marked A, B, C and D as shown below:



(ii) Justify your answer.

27. (a) Given below are few steps (not in proper sequence) followed in the determination of focal length of a given convex lens by obtaining a sharp image of a distant object:
    (i) Measure the distance between the lens and screen.
    (ii) Adjust the position of the lens to form a sharp image.
    (iii) Select a suitable distant object.
    (iv) Hold the lens between the object and the screen with its faces parallel to the screen.
    Write the correct sequences of steps for determination of focal length.
    (b) Justify your answer.

28. A student is asked to add a tea spoon full of solid sodium bicarbonate to a test tube containing approximately 3 mL of acetic acid. He observed that the solid sodium bicarbonate:
    (a) floats on the surface of acetic acid.
    (b) remains suspended in the acetic acid.
    (c) settles down in the test tube.
    (d) reacts with acetic acid and a clear solution is obtained.

29. Sodium bicarbonate solution is added to dilute ethanoic acid. It is observed that:
    (a) a gas evolves.
    (b) a solid settles at the bottom.
    (c) the mixture becomes warm.
    (d) the colour of the mixture becomes light yellow.

30. Regeneration observed in:
    (a) Starfish (b) Earthworm (c) Hydra (d) All of these

31. Fission of two types of gamete known as:
    (a) Fertilization (b) Zygote (c) Binary fission (d) Cytokinesis

32. In binary fission:
    (a) The identity of the parent body is maintained after reproduction.
    (b) The parent body is lost after reproduction.
    (c) The parent body enlarges.

(d) None of these

33. A yeast cell in which budding occurs, it can have:
    (a) One bud cell (b) Two bud cells
    (c) Three bud cells (d) A chain of bud cells

34. The point at the centre of a lens is called as:
    (a) Pole (b) Optical centre (c) Focus (d) Aperture

35. A lens of focal length f is cut into two equal parts without affecting its curvature. The two pieces will have equal focal length of:
    (a) f (b) $2f$ (c) $\frac{f}{2}$ (d) $\frac{f}{3}$

36. Vinita took 20 grams of seeds and placed them in distilled water in a petridish. She weighted the seeds kept in water at regular interval of two hours. She performed this activity four times continuous. In which interval of time she found more water had been imbibed by them:
    (a) Two hours (b) Four hours (c) Six hours (d) Eight hours

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(Solutions)

SECTION-A

1. Glycerol.
2. Yes, the same laws of reflection are valid for both plane and curved surfaces.
3. Grass $\longrightarrow$ Deer $\longrightarrow$ Lion
   (producers) (herbivore) (carnivore)
4. (a) It was based on increasing order of atomic weight and vertical similarly in properties, but vertical similarity of properties was given preference over increasing order. Consequently some elements with higher atomic weight were placed before the elements with lower atomic weight.
   (b) Isotopes were not given separate place in the periodic table although they had different atomic masses.
   (c) Certain elements with similar properties were placed in separate groups whereas some elements having dissimilar properties were placed in same groups.
5. The wings of insects are analogous to the wing of the bird. They both are analogous because they perform the same function, but are not similar in structural plan and development origin.
   Yes, the wings of birds are analogous to wings of bats. Bat wings consist of flaps of skin stretched between the bones of the fingers and arms. Bird wings consist of feathers extending all along the arm. They both have separate evolutionary origins, but are superficially similar because they evolved to serve the same function. Analogies are the result of convergent evolution.
   Note (just for knowledge, not for examination purpose): Though bird and bat wings are analogous as wings, but as forelimbs they are homologous. Birds and bats did not inherit wings from a common ancestor with wings, but they did inherit forelimbs from a common ancestor with forelimbs.
6. The S.I. unit of power is dioptre.
   If $f = 50$ cm = $\frac{1}{2}$ m, then P = $\frac{1}{f}$ = 2 D
7. Electron Affinity: Affinity is the energy change when an electron is gained by a gaseous atom. It depends on atomic size and electronic configuration.
   It decreases down a group. C (333) > A (324) > B (295) are in increasing order of atomic numbers.
8. (a) Its valency is 2. (b) It belongs to group 16 of periodic table.

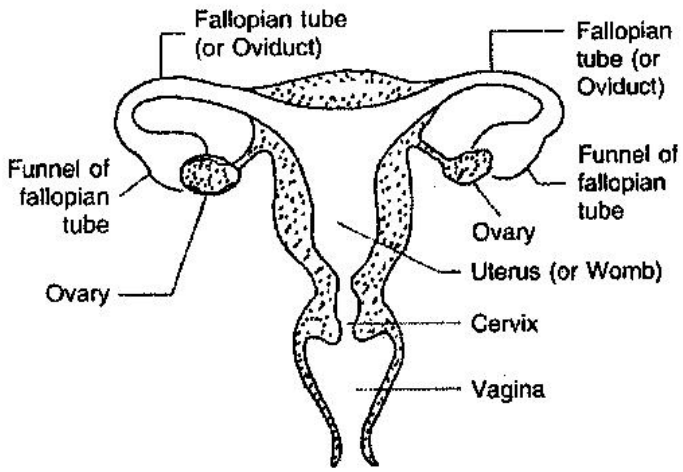
(c) It is non-metal. (d) It forms acidic oxide.
(e) The name of element is sulphur

9. Difference between Self-pollination and Cross-pollination:

Self – pollination	Cross – pollination
(i) Self-pollination occurs within a flower or between two flowers of the same plants.	(i) Cross-pollination occurs between two flowers borne on different plants of the same species.
(ii) Flowers do not depend on other agencies for pollination.	(ii) Agents such as insects, water and wind are required for pollination.
(iii) Pollen grains are produced in small numbers.	(iii) Pollen grains are produced in large numbers.
(iv) No wastage of pollen grains occur and thus economical.	(iv) Wastage of pollen grains occurs and hence not economical.
(v) Flowers are not attractive nor do they produce nectar.	(v) Flowers attract insects by various means like coloured petals, scent and nectar.
(vi) The offsprings produced are of the same genetic make up, so purity of the race is maintained.	(vi) The offsprings produced may show variations and differ in genetic make up.

10. (i) Ovulation occurs in the mid of the menstrual cycle around 14th day in a normal healthy woman.

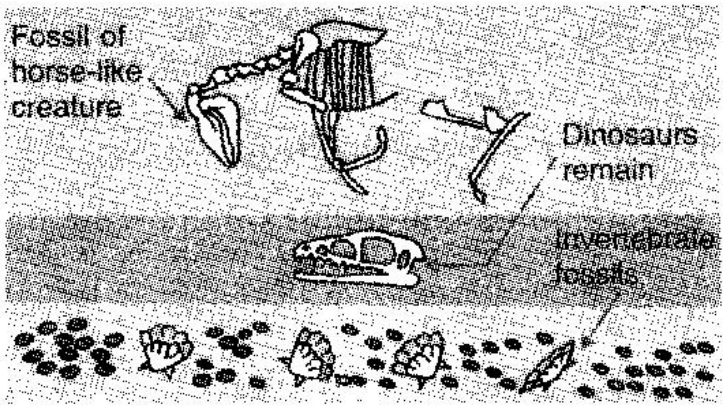
(ii)



Human Female Reproductive System.

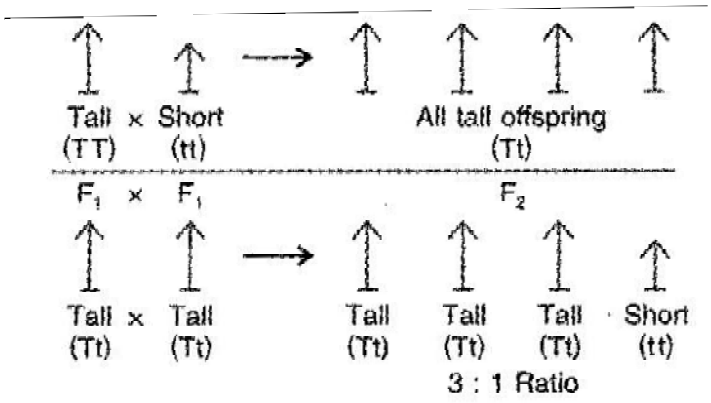
11. Fossils are formed layer by layer in the earth's crust.
- 100 millions ago invertebrates that were dead on the sea bed were buried in the sand and with time more sands accumulated and sandstones are formed.
- After million years, the dinosaurs living in the area die and get buried in mud which are compressed into rocks above the earlier invertebrate fossils.
- Eventually again million years later, the bodies of horse-like creature dies and their fossils are found in rocks above the earlier rocks.

- But much later, due to erosion, the water flow wears some of the rocks and the horse-like fossils are exposed and as we dig into deeper layers the older fossils are found.



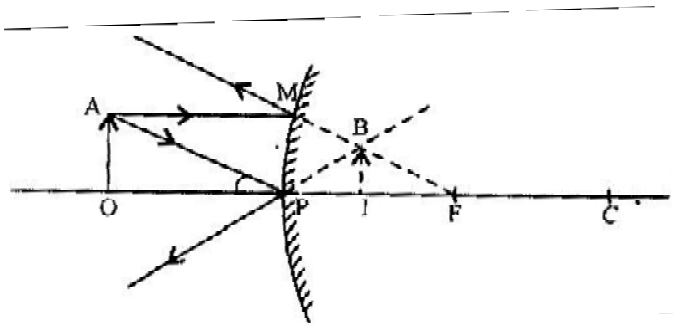
Layer by Layer fossil formation beneath the earth's crust

12. Mendel experiment's with peas on inheritance of traits considering only one visible contrasting character are as follows:
    - Mendel took pea plants with different characteristics as a tall plant and a short plant.
    - The first generation of F_1 progeny thus formed are all tall.
    - Mendel then allowed the F_1 progeny plants foe self-pollination.
    - The second generation of F_2 progeny of the F_1 tall plants are not all tall, some are short. This indicates that both tallness and shortness traits were inherited in F_1 plants but only the tallness trait was expressed.
    - Thus, two copies of the traits are inherited in each sexually reproducing organisms.
    - In the figure, both TT and Tt are tall plants, while only tt is a short plant.
    - A single copy of T is enough to make the plant tall while both copies have to be 't' for the plant to be short. Therefore, traits like 'T' are dominant traits while 't' are recessive traits.

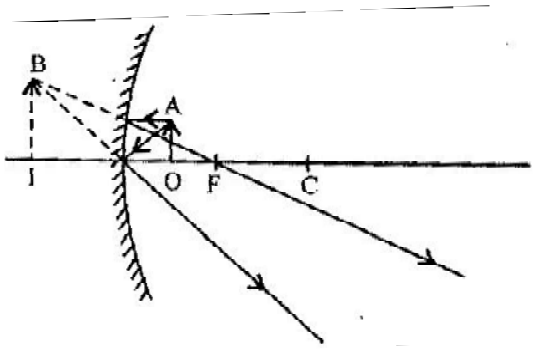


Showing inheritance of traits over two generations

13. (i) Convex mirror

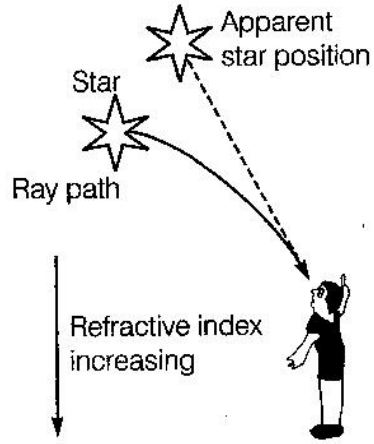


(ii) Concave mirror



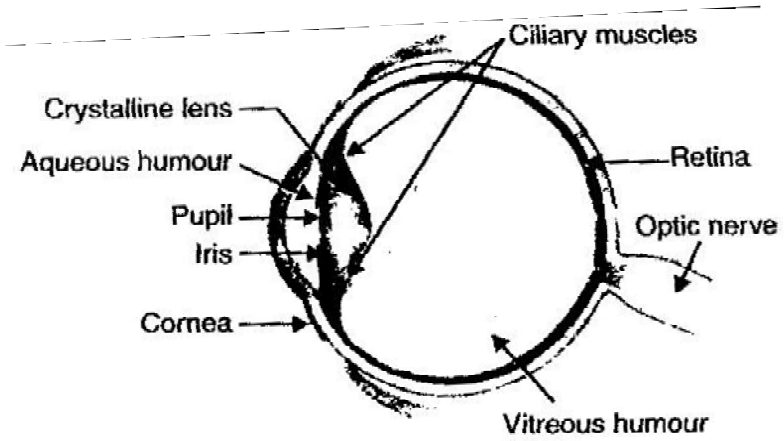
14. (i) Yes, speed of light is constant in free space.
(ii) In free space all colours will travel with same speed.
(iii) Yes, by keeping a prism inverted after a prism to split the white light, it is possible to re-unite the colours to form white light.

15. (a) The air just above the fire becomes hotter than the air further up. The hotter air is lighter (less dense) than the cooler air above it and has a refracting index slightly less than that of the cooler air. Since, the physical conditions of the refracting medium (air) are not stationary, the apparent position of the object as seen through the hot air, fluctuates.
(b) Twinkling of stars is a similar phenomenon on a much larger scale.



(c) Values shown by Sheeba are friendship, concern for each other, practical mind and cooperative attitude

16.



Human Eye

17. Vegetarian food habits involve two steps food chains. These two steps are producer plants and herbivorous animals.
As energy flows as per 10% law from one trophic level to the next trophic level. So, vegetarian would get more energy than the non-vegetarians and more energy means more food for larger number of people.
Therefore, vegetarian food habits can sustain a larger number of people.

18. Three measures for protection of wildlife:
(i) **Controlling the deforestation of forest**: Forests provide natural habitat to the wildlife.
(ii) **Controlling the unlawful poaching (hunting of the animals)**: Because of this, many species of wildlife have become endangered and some have even become extinct.
(iii) **By developing Wildlife Parks and Sanctuaries** in which wild animals could be kept protected in their natural habitat.

19. Difference between Diamond and Graphite:

Diamond	Graphite
(i) It is the hardest substance.	(i) It is soft and slipperty.
(ii) It is transparent and colourless.	(ii) It is opaque and black coloured.
(iii) It is a non-conductor of electricity.	(iii) It is a good conductor of electricity.
(iv) In diamond, all carbon atoms are tetrahedrally bonded.	(iv) In graphite, there are some free valencies.
(v) It has high refractive index.	(v) Its refractive index is very low.

Or

(a) Alcohols on oxidation with alkaline $KMnO_4$ or acidified $K_2Cr_2O_7$ give acids. Carboxylic acid ($C_2H_4O_2$) contains 2-carbon atoms, therefore alcohol (Y) should also contain 2-carbon atoms. So it is ethanol and the a carboxylic acid is ethanoic acid.

$$CH_3CH_2OH \xrightarrow[\text{or acidified } K_2Cr_2O_7, \Delta]{\text{Alk. } KMnO_4, \Delta} CH_3COOH$$

Ethanol (2-C) (Y) — Ethanoic acid

The carboxylic acid and alcohol in presence of conc. H_2SO_4 react to produce ester (X).

$$CH_3COOH + C_2H_5OH \xrightarrow[\text{Heat}]{\text{Conc. } H_2SO_4} CH_3COOC_2H_5 + H_2O$$

Ethanoic Acid — Ethanol (Y) — Ethyl ethanoate (X)

So compound X is ethyl ethanoate and compound Y is ethanol.

(b) Alkanes give substitution reaction. General formula for alkanes is C_nH_{2n+2}.
Butane (C_4H_{10}) and pentane (C_5H_{12}) correspond to the general formula of alkanes. These are saturated hydrocarbon and undergo substitution reaction which is their characteristic property.

20. (a) (i) Saturated hydrocarbons generally burn with a non-sooty blue flame.
(ii) Unsaturated carbon compounds burn with sooty yellow flame.

(b) In the presence of sunlight, chlorine reacts with methane. It can replace the hydrogen atoms by one (substituiotn reaction).

$$CH_4 + Cl_2 \xrightarrow{\text{Sunlight}} CH_3Cl + HCl$$

Methane — Chlorine — Monochloro metane

$$CH_3Cl + Cl_2 \xrightarrow{\text{Sunlight}} CH_2Cl_2 + HCl$$

Monochloro methane — Dichloro methane

$$CH_2Cl_2 + Cl_2 \xrightarrow{\text{Sunlight}} CHCl_3 + HCl$$

Dichloro methane — Trichloro methane (chloroform)

$$CHCl_3 + Cl_2 \xrightarrow{\text{Sunlight}} CCl_4 + HCl$$

Trichloro Methane (chloroform) — Carbon tetrachloride

(c) An aqueous solution of ethanol containing 95% ethanol and 5% water is called rectified spirit.

(d) Hard water contains Ca^{2+} and Mg^{2+} ions. Soap reacts with these ions of hard water and forms scum (precipitate) of insoluble calcium salt and magnesium salt. Scum sticks to the clothes. That's why soap does not produce lather or foam with hard water.

(e) Pure acetic acid is called glacial acetic acid.

Or

(a) When unsaturated hydrocarbons react with hydrogen in the presence of a catalyst like Nickel, the hydrogen gets added across the double/triple bond and saturated hydrocarbons are formed. Such reactions is called hydrogenation.

$$CH_2 = CH_2 + H_2 \xrightarrow[\text{Catalyst}]{Ni} \underset{\underset{H}{|}}{CH_2} - \underset{\underset{H}{|}}{CH_2} \text{ or } CH_3 - CH_3$$

Ethene (Unsaturated) — Ethane (Saturated)

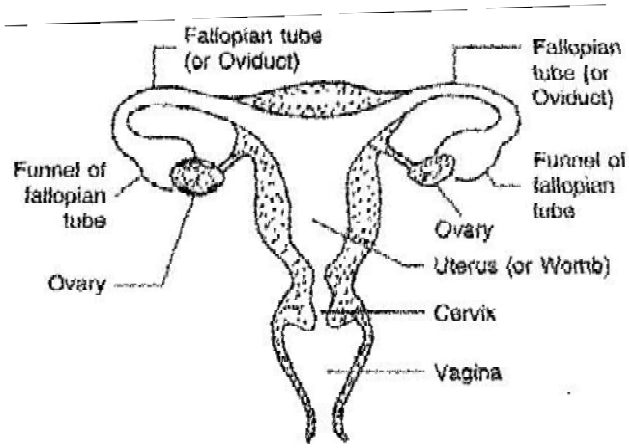
Industrial Use: It is used in the preparation of vanaspati ghee from vegetable oil.

$$\text{Vegetable oil} + H_2 \xrightarrow[473\ K]{Ni} \text{Vanaspati ghrr}$$

(b) When carboxylic acid reacts with alcohol in presence of conc. H_2SO_4, ester is formed. This is called esterification.

$$\text{Carboxylic acid} + \text{Alcohol} \xrightarrow{\text{Conc. } H_2SO_4} \text{Ester} + \text{water}$$

21. Female Reproductive system: The female germ-cells or eggs are made in the ovaries and are responsible for the production of some hormones. The human female reproductive system consists of the following organs:



Human Female Reproductive System

(i) **Ovaries** are a pair of small and oval-shaped organs, located in the abdominal cavity near the kidney. Ovaries are the female primary reproductive organs which perform dual functions of production of female gamete or ovum and the secretion of female sex hormones, estrogen and progesterone.

(ii) **Fallopian tubes or Oviduct** are a pair of long convoluted tubes that carry ova or eggs from the ovary to the uterus. The fallopian tube has a funnel shaped opening near the ovary. These tubes from both the sides open into an elastic bag-like structure, the uterus.

(iii) **Uterus** or womb is a hollow, pear-shaped organ within which the embryo develops. Its upper portion is broader, while its lower portion is narrower, called cervix.

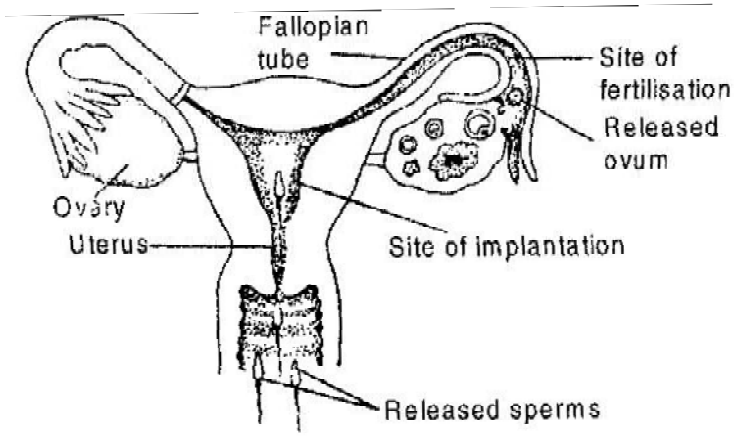
(iv) **Vagina**: The uterus opens into the vagina through the cervix. Vagina is a tabular structure called "Birth canal". It receives sperms from the male and also serves as the passage through which the fully developed foetus is born.

Or

The process of fertilization in human female is internal, i.e. it takes place inside the female human body.

Sexual Reproduction in Human Beings:

- The male gamete (sperm) is introduced inside the female genital tract (vagina) by the process of copulation or mating. Fertilization occurs in the fallopian tube.
- Sperms are highly active and mobile which move up through cervix into the uterus and then pass into the fallopian tubes.



Fertilization takes place inside the fallopian tube

- In the fallopian tube only one sperm fertilizes the ovum to form a zygote. This is called fertilization.
- Fertilization occurs only is copulation takes place during the ovulatory period.
- The embryonic development of the zygote starts immediately in the fallopian tube and pregnancy starts while menstruation stops.
- The embryo moves down to reach the uterus. The embedding of embryo in the thick inner lining of the uterus is called implantation.
- Then, a special tissue develops between the uterine wall and the embryo (foetus) called placenta, where the exchange of nutrients, oxygen and waste products takes place.
- The time period from the development of foetus inside the uterus till birth us called gestation.
- The act of living birth of the fully developed foetus at the end of gestation period is termed as parturition.
- The development of the child inside the mother's body takes approximately nine months.

22. The various modes of reproduction used by single organisms or sexual methods of reproduction are as follows:
    (i) **Fission:** This is the simplest method of asexual reproduction in unicellular forms of life such as Amoeba, Paramoecium and other protozoa. In this process, the parent organism splits or divides to form two or more new organisms.

(ii) **Fragmentation**: Multicellular organisms with simple body organization such as filamentous algae – Spirogyra breaks up into two or more small pieces or fragments upon maturation. These fragments grow into new individuals.

(iii) **Regeneration**: It is the ability of a fully differentiated organism to give rise to new individual organism from its body parts. For example, simple organisms like Hydra and Planaria can be cut into any number of pieces and each piece grows into a complete organism.

(iv) **Budding**: In budding, a small part of a body of the parent grows out as a 'bud' which then detaches and becomes a new organism.

(v) **Vegetative Propagation**: In vegetative propagation, new plants are obtained from the parts of the old plants like stems, roots and leaves without the help of any reproductive organ. There are two ways of vegetative propagation: (i) Natural vegetative propagation and (ii) Artificial vegetative propagation.

(vi) **Spore formation**: When a slice of a bread is kept in moist dark place for a few days, spores of Rhizopus present in air settle on the bread to form new fungus plant of Rhizopus.

Or

The characteristics of a population changes over the years for the following situations:

For example: 12 red beetles live in a green leafy bush grows by sexual reproduction and generate variation.

(a) Situation to gain survival advantage:

- Crows eat these beetles, leaving only fewer beetles available for reproduction.
- Due to colour variation during reproduction, only one green beetle evolves and therefore, all its progeny beetles become green.
- Crows cannot see green coloured beetles on green leaves and hence cannot eat them, resulting more green beetles than red ones in the beetle population.

(b) **Situation due to accidental survival**:

- Due to colour variation during reproduction, a blue colour beetle appears and all its progeny beetles become blue.
- Crows can see red and blue beetles and therefore, eat them.
- Initially there are less number of blue beetles and more of red beetles.
- Then an elephant stumps on the bushes and kills most of the beetles. By chance, few beetles that survived were mostly blue.
- Thus the blue beetle population slowly expands.
- There is no survival advantage on this variation and provides diversity without adaptation.

(c) **Situation of temporary change of characteristics**:

- As the beetle population begins to expand, the bushes suffer from a disease and amount of leaf available for beetles have reduced.

- Thus the beetles are poorly nourished and the average weight of an adult beetle has decreased.
- After few years, the plant disease is eliminated and enough food is available for the beetles. Thus the beetles have come back to its normal size and weight.
- This change in not inherited over generation.

23. For concave mirror, $u = -25$ cm, $f = -10$ cm, side of square = 3 cm,

From mirror equation, $\frac{1}{f} = \frac{1}{u} + \frac{1}{v} \quad \Rightarrow \quad \frac{1}{v} = \frac{1}{f} - \frac{1}{u} = \frac{1}{-10} - \frac{1}{-25} = \frac{-3}{50}$

$\therefore \; v = \frac{-50}{3} = -16.67$ cm

Therefore the image of the square wire us formed on the same side of object at 16.6 cm.

Also Magnification $(m) = \frac{-v}{u} = \frac{(-50/3)}{-25} = \frac{-2}{3}$

$\therefore$ Size of image of one side of square.

$$h_1 = 3 \times \frac{2}{3} = 2 \text{ cm}$$

Image in inverted.

Area enclosed by the image of wire = (Size of image)^2 = 2^2 = 4.0 cm^2

Or

For a concave mirror, $u = -27$ cm, R = -36 cm, h = 2.5 cm

From mirror equation, $\frac{1}{v} = \frac{1}{f} - \frac{1}{u} = \frac{1}{R/2} - \frac{1}{u} = \frac{2}{R} - \frac{1}{u} = \frac{2}{-36} - \frac{1}{-27} = \frac{-1}{54}$

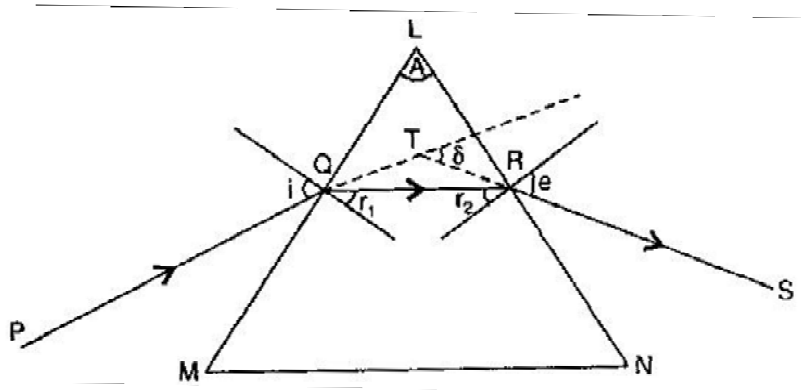
$\therefore \; v = -54$ cm

Also Magnification $(m) = \frac{h'}{h} = \frac{-v}{u} \quad \Rightarrow \quad \frac{h'}{2.5} = -\frac{-54}{-27} \quad \Rightarrow \quad h' = -5.0$ cm

$\therefore$ Screen should be placed at 54 cm on the same side of object in order to receive a sharp image.

The image is real, inverted, magnified having the size of 5.0 cm. We know that if the object distance decreases, the image distance will increase. SO if the candle is moved closer to the mirror, the position of image increases continuously. If the candle is placed at the focus of a concave mirror, i.e. at 18.0 cm, the image is formed at infinity and if the candle moves further towards the pole, i.e. between the pole and the focus, the image gets virtual, erect, magnified and can't be obtained on the screen.

24.



(i) δ = Angle of deviation

(ii) e = Angle of emergence

(iii) A = Angle of prism

Or

Points of similarities

Camera	Human Eye
(i) Image is formed by a convex lens made of glass.	(i) Image is formed by the eye lens (a convex lens) made of fibrous jelly like material.
(ii) A real and inverted image is formed on the photographic film.	(ii) A real and inverted image is formed on the retina.
(iii) Diaphragm controls the amount of light entering the camera.	(iii) Pupil in the iris controls the amount of light entering the eye.
(iv) Time of exposure is controlled by a shutter.	(iv) Time of exposure is controlled by the eyelids.

Points of dissimilarities

Camera	Human Eye
(i) Focal length of camera lens is fixed.	(i) Focal length of eye lens can be changed with the help of ciliary muscles.
(ii) Focussing is done by changing the distance between the camera lens and the photographic film.	(ii) Focussing is done by changing the shape of the eye lens by the action of ciliary muscles.
(iii) Photographic film retains the image permanently.	(iii) The retina of the eye retains the impression of an image for about $\frac{1}{16}th$ of a second.
(iv) A photograph has to be changed for getting next image.	(iv) The same retina can be used for viewing an unlimited number of images.
(v) The angular region covered is about 60°.	(v) The angular region covered is about 150°.

Section B

25. (i) dehydrating agent, esterification

    (ii) $CH_3COOH + C_2H_5OH \xrightarrow{\text{conc. } H_2SO_4} CH_3COOC_2H_5 + H_2O$

26. (i) Slide A is showing the budding in yeast.

    (ii) Because buds appear as protuberances.

27. (a) The correct sequence is: (iii), (iv), (ii), (i)

    (b) Unless an object is chosen and setting of lens and screen in proper, image distance and thereby the focal length cannot be found.

28. (d)
29. (a)
30. (d)
31. (b)
32. (b)
33. (d)
34. (b)
35. (a)
36. (d)