



UNIVERSAL EDUCATION CENTRE

JAYANT SHARMA (94145-37474)

Time – 3 Hours

SCIENCE 10TH

M.M. 90

- (i) Question numbers 1 to 4 in **Section-A** are **one mark** questions. These are to be answered in **one word** or in **one sentence**.
- (ii) Question numbers 5 to 11 in **Section-A** are **two marks** questions. These are to be answered in about **30 words** each.
- (iii) Question numbers 12 to 23 in **Section-A** are **three marks** questions. These are to be answered in about **50 words** each.
- (iv) Question numbers 24 to 27 in **Section-A** are **five marks** questions. These are to be answered in about **70 words** each.
- (v) Question numbers 28 to 43 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.

Solution

Section - A

- Aldehyde
- To regulate the amount of light entering the eye.
- Chlorofluorocarbons – CFCs. Deplete ozone layer.
- glass
- (a) Modern Periodic law states that “The chemical properties of the elements are the periodic functions of their atomic numbers.”
(b) Electronegativity increases across a period
- (a) Elements in a group have similar electronic configuration so all of them have 1 valence electron.
(b) second period
- (a) Fallopian tube / oviduct (b) Ovary
- Unisexual flowers - possess either male or female reproductive organs Bisexual flowers – possess both male and female reproductive organs.
- $P_1 = 6D$ So $f_1 = 1/6 \text{ m} = 100/6 \text{ m} = +16.6 \text{ cm}$. So its a convex / converging lens.
 $P_2 = -1.5 D$ So $f_2 = 1/-1.5 \text{ m} = 100/1.5 \text{ m} = -66.6 \text{ cm}$. So it's a concave / diverging lens.
- This is because of scattering of light.
Light from the Sun near the horizon passes through larger distance in the earth's atmosphere before reaching our eyes so, most of the blue light and shorter wavelengths are scattered away by the particles. Therefore, the light that reaches our eyes is of longer wavelengths. This gives rise to the reddish appearance. But during the day shorter wavelength are scattered more by molecules of air. Scattered blue light enters our eyes.
- (a) Dispersion white light consist of seven colours of different wavelength, hence split.
These components of light travel with different speed in glass and get refracted by different angles.
(b) Violet Indigo Blue Green Yellow Orange Red
- Use tubelights or CFLs rather than bulbs
Switch off electrical appliances when not in use
In winters use extra clothing rather than heaters.
- Flooding of neighbouring areas / displacement of locals / increased soil salinity.
- (a) Add sodium carbonate or sodium bicarbonate to both the test tubes.
The one showing brisk effervescence contains Ethanoic acid
(b) Ethene
(c) Detergents do not form scum or precipitate in hard water.
- (a) Element E



- (b) K L M
2 8 6

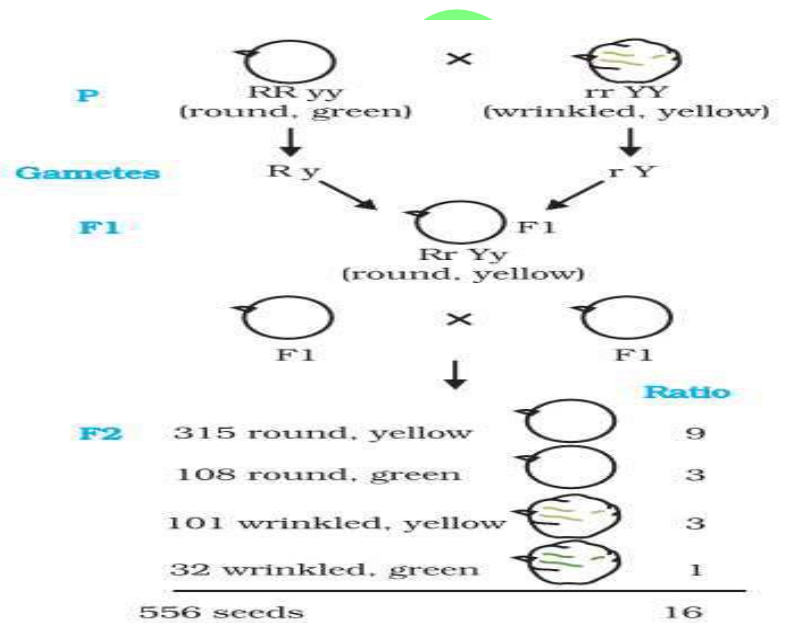
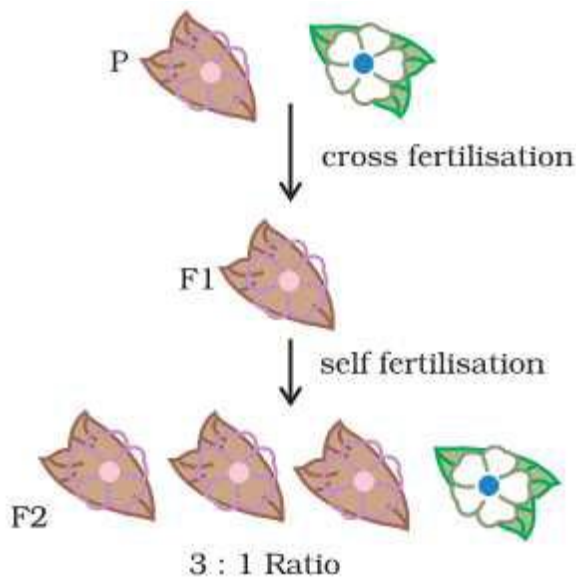
(c) X and Z

16. In binary fission two daughter cells are formed and in multiple fission many daughter cells are formed simultaneously.

(a) Plasmodium / malarial parasite.

(b) Plants bear flowers and fruits earlier/ seedless fruits can be obtained/ Desirable traits can be propagated due to genetic similarity.

17.



(a) Pp

(b) 3 : 1

18. (a) Putting the organisms of the same species in faraway geographical areas so that they cannot interbreed.

(b) (i) Analogous – same function but different basic structure

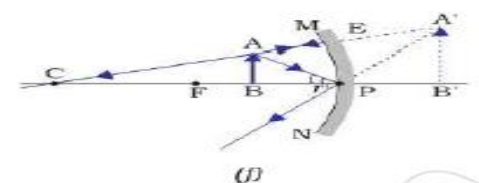
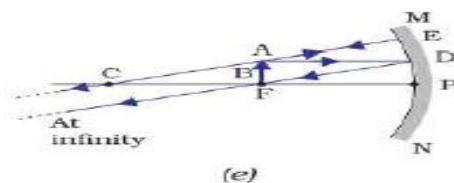
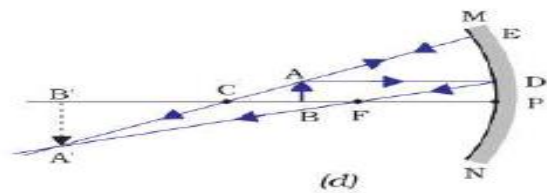
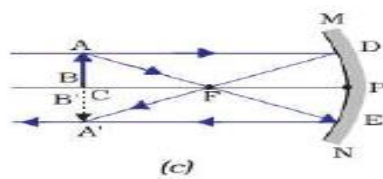
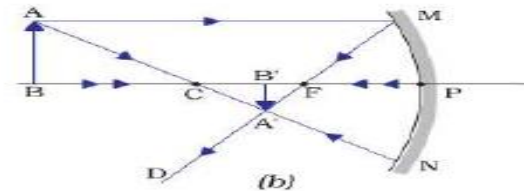
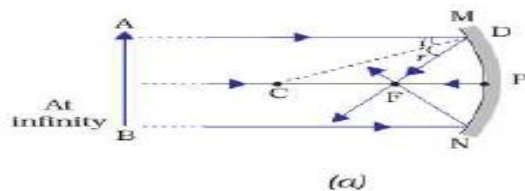
(ii) Homologous – same basic structure but different functions

19. Fossil Significance – Study of similarity / Evolutionary history / Simple forms gave rise to complex ones.

20. (a) less than 15 cm in case of concave mirror and anywhere in front in case of convex mirror .

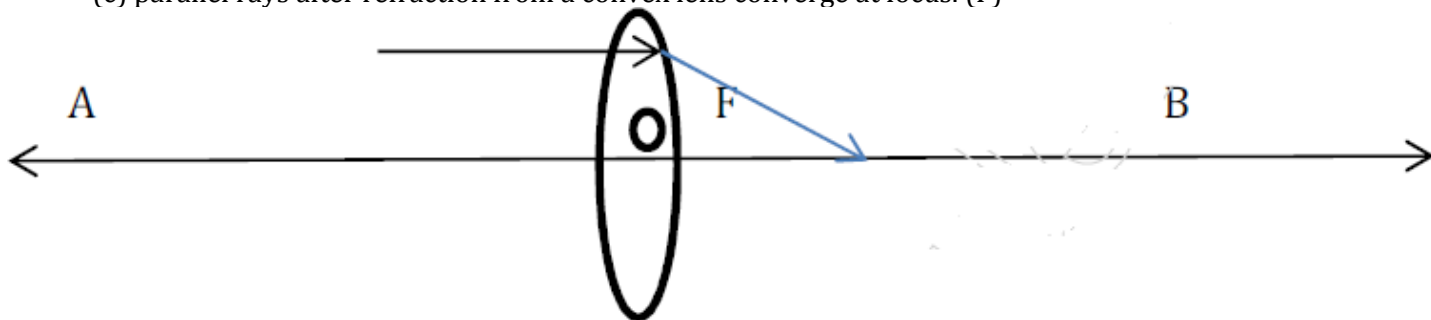
(b) larger in concave mirror and smaller in convex mirror.

(c)

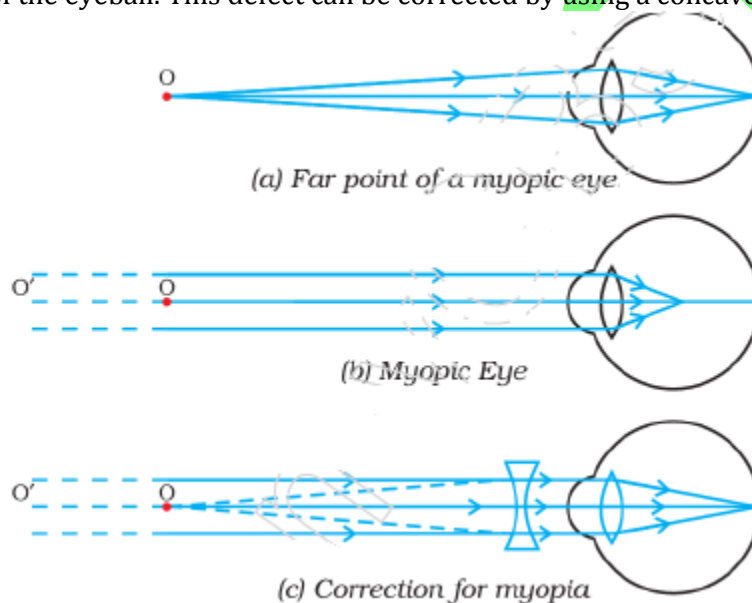




21. (a) The centre of the lens (O)
 (b) An imaginary straight line passing through the two centres of curvatures AB)
 (c) parallel rays after refraction from a convex lens converge at focus. (F)

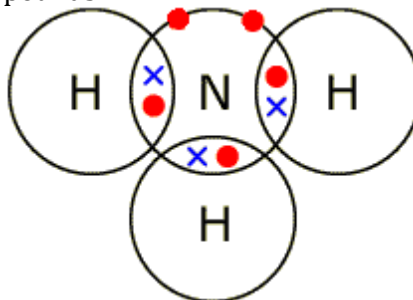


22. Myopia This defect may arise due to
 (i) excessive curvature of the eye lens, or
 (ii) elongation of the eyeball. This defect can be corrected by using a concave lens of suitable power.



23. Testes produce the sperms.
 Prostate gland secretes the fluid serum which ensures easy movement of sperm. vas deferens helps in the passage of sperm and serum urethra helps in the ejaculation of sperm from the body.
 Human male reproductive system is called 'urinogenital system' as urine and semen come out from the same tract.

24. (a) Intermolecular forces are small in covalent compounds.

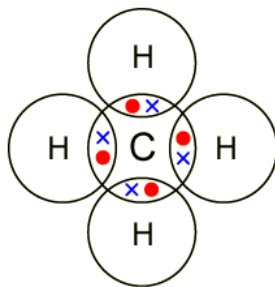


- (b) NH_3 (Ammonia)
 (c) (i) Ethene and water
 (ii) Dehydrating agent
 (d) Catenation and Tetravalency of carbon

OR

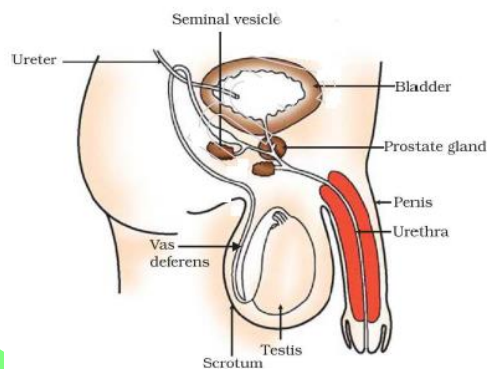


- (a) Catenation – The property of an element to form long chains compounds by making bonds with its' other atoms. Silicon shows this property.
- (b) Solvent in various medicines and used as a beverage
- (c) Methane (CH₄)



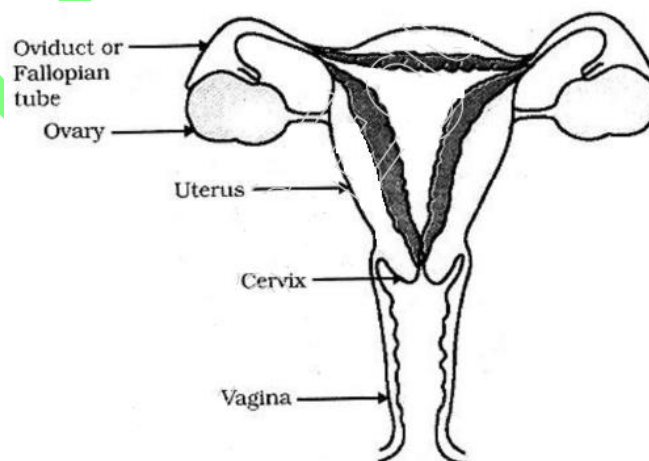
(d) C₂H₅ONa + H₂

25. (a) (i) Transfer of pollen grains from anther to stigma.
 (ii) helps in evolution and survival.
 (iii) Prevents fertilization – Barrier method.
 (b) human male reproductive system



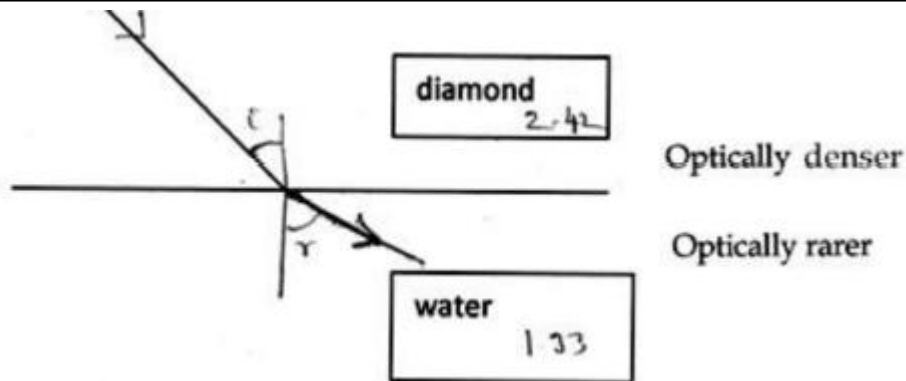
OR

- (a) Menstruation is the shedding off the uterine lining along with the degenerated ovum through the vagina as blood and mucus. When egg is not fertilized, then the inner lining of uterus is shredded off. They change the hormonal balances.
 (b)



Human – female reproductive system

26. Bending of a ray of light as it passes from one medium to other - Refraction. Ray of light on striking surface returns to same medium – Reflection.



(c) $v = c/n = 3 \times 10^8 / 1.5 = 2 \times 10^8 \text{ m/s}$

OR

(a) It means the ratio of speed of light in air to the speed of light in water is 4/3.

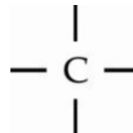
- (b) $h = +4.0 \text{ cm};$
 $u = -25.0 \text{ cm};$
 $f = -15.0 \text{ cm};$
 $1/v + 1/u = 1/f,$
 $1/v = 1/(-15) - 1/(-25)$
 $= -1/15 + 1/25 = -2/75,$
 $v = -37.5 \text{ cm}$
 Real and inverted, beyond C
 $m = h'/4 = -v/u = -(-37.5)/(-25) = -1.5;$
 $h' = -6 \text{ cm}$

Two uses of concave mirror - in search lights and by the by dentists

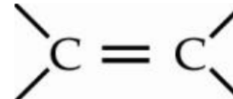
Convex mirror - Rear view mirror, In shops for keeping eye on persons.

27. (i) Correct difference

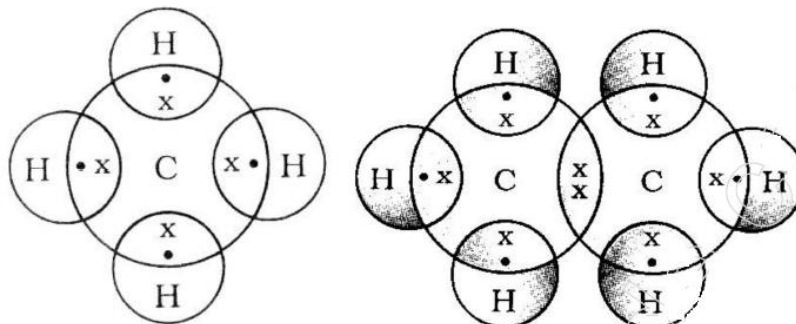
(ii) Saturated - Methane CH_4



Unsaturated - Ethene C_2H_4



(iii)



SECTION - B

- | | | | | | |
|--------|--------|--------|--------|--------|--------|
| 28.(b) | 29.(b) | 30.(c) | 31.(a) | 32.(d) | 33.(d) |
| 34.(c) | 35.(a) | 36.(c) | 37.(d) | 38.(a) | 39.(d) |
| 40.(c) | 41.(d) | 42.(b) | 43.(b) | | |