MARKING SCHEME **Code No. 31/2/1**
CLASS X – FOREIGN

	Expected Answer/ Value point	Marks	Total
	SECTION – A		
Q1.	Carbon, Due to strong C—C bond	½, ½	1
Q2.	Budding / Regeneration	1/2	
	Asexual reproduction	1/2	1
Q3.	It is the physical, chemical and biological conditions of the region.		1
Q4.	Focal length of both the mirrors will be the same / 1: 1	1	
	Mirror AB will always form virtual image as it is a diverging / convex mirror	½+ ½	2
Q5.	The development which can be maintained for a long time without undue damage to the environment	1	
	Two objectives:- i)To provide the economic well being to the present and future generation , ii)To maintain a healthy environment and life support system	½ + ½	2
Q6.	i)By the local people for the fulfilment of their daily needs	½	
	ii)By industrialists- deforestation for industrial needs	½,	
	iii)Deforestation for developmental projects – building,roads, dams etc.	½	
	iv)By tourists or in making arrangements for tourists	½ ½	2
Q7.	Ethanol, C_2H_5OH /C_2H_6O	½,1/2	
	$C_2H_5OH \rightarrow CH_2=CH_2 + H_2O$		
	Ethene	1, ½	
	Role of conc H_2SO_4− dehydrating agent	½	3
Q8.	P—Ethanol, Q—Ethanoic acid ,R—Hydrogen	3x ½	
	$CH_3CH_2OH \xrightarrow{\text{Acidified } K_2Cr_2O_7} CH_3COOH$	1	
	$2CH_3COOH + 2Na \longrightarrow 2\,CH_3COONa + H_2$	½	3
Q9.	i)Aim of classification--systematic study of the known elements ii)Basic property—Atomic number iii)Properties of the elements are a periodic function of their atomic numbers. iv)Metals on the left v)Non–metals on the right. vi)Metalloids at the border of metals and beginning of non-metals	6x ½	3
Q10.	X(20)--- 2,8,8,2.It is calcium.	½, ½	
	Second group,fourth period	½ , ½	
	$CaO + H_2O \longrightarrow Ca(OH)_2$	1	3
Q11.	Pollination − process of transfer of pollen grains from the anther to stigma of the flower	1	
	Two types − Self pollination and cross pollination Self pollination is the transfer of pollen grains from anther to stigma of the same flower, whereas in cross pollination transfer of pollen grains is from anther of one flower to the stigma of another flower.	½,1/2 1	3

Q12. i)Each piece regenerates into a new planaria 1

ii)Its filaments breaks into smaller pieces/fragments and each fragment gives rise to a new filament. 1

iii)It releases spores which germinate into new mycelium in moist conditions. 1 3

Q13. Two major processes namely formation of gametes and fusion of gametes constitute sexual reproduction 1

Significance—i) Incorporates the process of combining DNA from two different individuals during reproduction.

ii) Increases genetic variation.

iii) Promotes diversity in the offsprings.

iv) Plays a role in the origin of new species . 4x ½ 3

Q14.

• Dominant trait	Recessive trait
i)The trait which appears in the F1 progeny, is dominant	i) the trait which remains hidden or which does not appear in the F1 progeny is the recessive trait.
ii)It appears in more numbers	ii) It appears in less number

2 x 1

- 75%of the plants were with round seeds 1 3

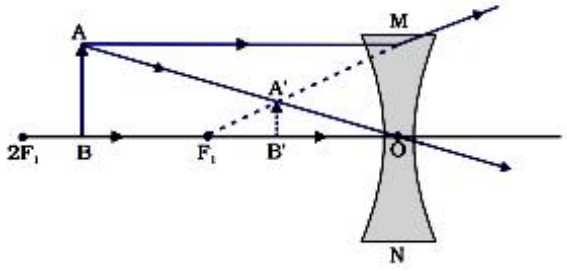
Q15. Three factors / evidences and their roles

i) Analogous organs – organisms with similar looking organs may have different origin

ii) Homologous organs—organisms with apparently different looking organs may have similar origin.

iii) Fossils—allow us to make estimates of how far back evolutionary relationships go. Fossils when chronologically arranged help in tracing the evolutionary history of an organism. 3x1 3

Q16. Diverging lens / concave lens ½



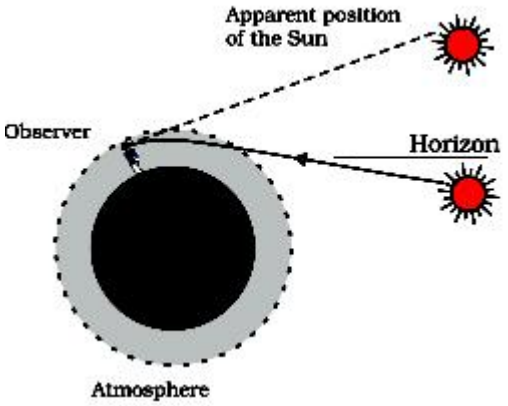
1

Focal length = −20cm (lens is concave, hence *f* is –ve) ½

Power = P = 1/*f* = 100/ −20cm = −5D ½ + ½ 3

Q17. Advanced sunrise − When the sun is slightly below the horizon light rays coming from the sun travel from the rarer to denser medium layers of air because of atmospheric refraction of light, light appears to come from a higher position above the horizon. Thus the sun appear earlier than actual sun rise 1

Delayed sun set − Same reason as similar refraction occurs at the sunset / or 1



Twinkling of stars – the light coming from the stars gets refracted several times before reaching the observers eye.Due to change in physical condition of the atmosphere the light sometimes reaches the observer and sometimes it doesn't, hence they appear to twinkle 1 3

Q18. (i) Fossil fuels take millions of years in their formation, hence are exhaustible/need to be conserved to provide energy for a longer duration / sustainable development

(ii) Walking short distances/ use of public transport/ where possible switch off unnecessary lights / repair of faulty water taps/use of efficient appliances/ promotion of solar energy/any other correct option (any two)

(iii) concerned about natural resources /environment /assertive/or any other (any two) 1,1,1 3

Q19. a)

Solution	Blue Litmus Paper	Red Litmus Paper	Sodium Metal	
Ethanol	No change	No change	Hydrogen gas	1
Ethanoic acid	Turns red	No change	Hydrogen gas	1
Soap	No change	Turns blue	Hydrogen gas	1

(full credit may be given to the candidate with the answer showing test only with litmus paper)

b) Hard water contains calcium ions or magnesium ions or both. These ions on reacting with soap solution forms insoluble substance called scum. 1+1 5

Q20.
- Vegetatitive propagation is the development of a new plant from the vegetative parts / roots ,stem and leaves of a plant 1
- Advantages − i) such plants can bear flowers and fruits earlier than those produced from seeds

ii) Allows propagation of plants (banana, orange etc) that have lost capacity to produce seeds.

iii) All plants produced are genetically similar to the parent plant and hence have all its characters. 3x1

- Jasmine, banana ½, ½ 5

Q21. a) Reasons − i) Pea plant is small and easy to grow. 2 x ½

ii) A large number of true breeding varieties of pea plant are available.

iii) Short life cycle.

iv) Both self and cross pollination can be made possible

(any two reasons)

b) Contrasting characters ; 2 x ½

Round /Wrinkled seeds

Tall/Short plants

White /purple flowers

Green / yellow seeds (or any other) (any two)

c) When Mendel crossed two pea plants with a pair of contrasting characters only one character appeared in all the members of F1 progeny, the others remain hidden .

On selfing F1, the hidden characters reappeared in just 25% of the offsprings and the other 75%shared the characters expressed in F1.

Mendel concluded that the character which expresses itself in F1and in 75% of the individuals of F2 is dominating while the other is recessive .(or same thing can be explained by using an example) 1,1,1 5

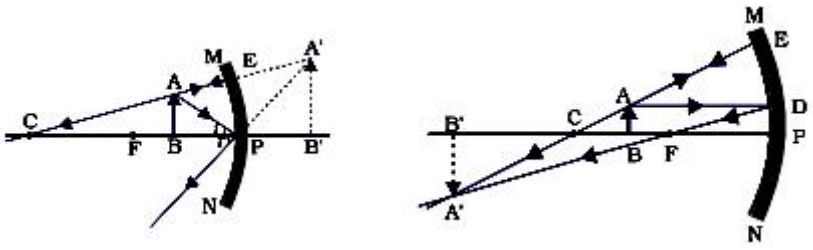
Q22. $f_a = 10$ cm; $f_b = 15$ cm; $f_c = 20$ cm

$u_1 = 10$ cm; $u_2 = 20$ cm; $u_3 = 30$ cm

a) m= -1 means $u = 2f$, for A $\rightarrow u_2$, for B $\rightarrow u_3$ 3 x ½

b) Mirror B or C − distance should be less than focal length for erect and magnified image , face is generally kept at a distance more than 10 cm 3 x ½

c)



1,1 5

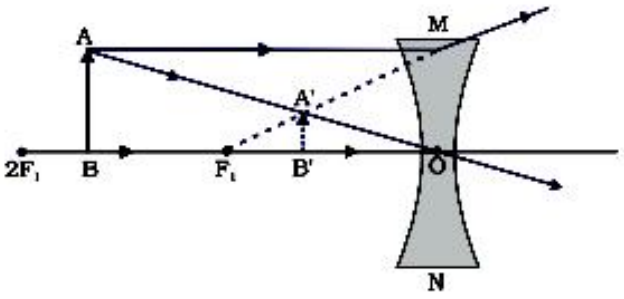
Q23. $f = -20\text{cm}; \quad h_1 = 6\text{cm}; \quad v = -15\text{cm}; \quad u = ?$

Lens formula: $\frac{1}{f} = \frac{1}{v} - \frac{1}{u}$ ½

$\Rightarrow u = \frac{vf}{f - v} = \frac{-15\text{cm} \times -20\text{cm}}{-20\text{cm} - (-15\text{cm})}$ 1

$= -60\text{cm}$ *object at* 60cm *from the lens* ½

$h_2 = \frac{v}{u} \times h_1 = \frac{-15\text{cm}}{-60\text{cm}} \times 6\text{cm} = +1.5\text{cm}$ diminished erect 1



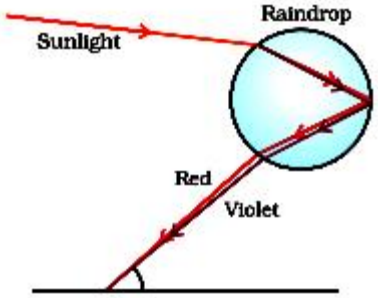
2 5

Q24. a) Definition of Dispersion: Splitting of white light into seven constituent colors by a prism. 1

Cause of dispersion − when white light passes through a glass prism, different 1

constituent colors bend through different angles with respect to the incident ray and hence are separated.

b)



2

Conditions for observing a rainbow − i) after the rainfall/ at a water fountain ii) sun is at the back of the observer ½, ½ 5

SECTION – B

25) b	26) c	27) a		
28) d	29) c	30) c		
31) d	32) a	33) b	9 x 1	9

Q34. Physical properties− i) smell like vinegar, ii)colourless liquid 2x ½

Chemical propertirs − i) turns blue litmus red, ii)gives brisk effervescence with sodium carbonate. 2x ½ 2

Q35. Binary fission ½

Initial stage final stage ,

process starts with elongation of nucleus 2x1/2, 1/2 2

Q36. a) Towards the lens
b) Size decreases gradually
c) Nearly 30 cm from the lens
d) Intensity of the image gradually increases 4 x ½ 2