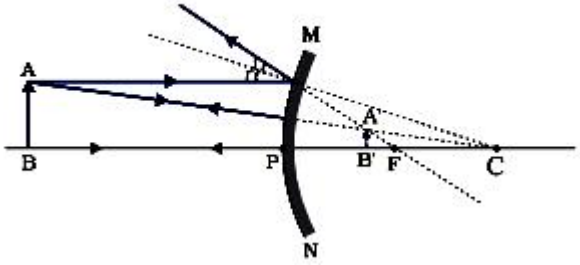
MARKING SCHEME **Code No. 31/2/2**
CLASS X – FOREIGN

	Expected Answer/ Value point	Marks	Total
	SECTION – A		
Q1.	Butane , C_4H_{10}	½, ½	1
Q2.	Water melon, papaya (or any other correct example)	½, ½	1
Q3.	Because producers (plants) have the ability to trap solar energy with the help of chlorophyll .	1	1
Q4.	Virtual/ erect /smaller than the object (any two)	2x ½	1
		1	1
Q5.	i) Air /water / noise/soil pollution ii) Loss of bio diversities because of deforestation iii) Nuclear radiation emitted by nuclear power plants iv) Acid rain / global warming	4x ½	2
Q6.	The Government had to rethink their priorities in the use of forest produce and change their forest policies , this ensured a stable availability of the forest produce to the villagers.	1	
	It led to efficient management of forest and also resulted in conservation of soil and water which ultimately benefitted the local people.	1	2
Q7.	a)Functional group − hetero atom or group of atoms attached to the carbon chain ,which gives specific properties to the compound, is called a functional group	1	
	i)Aldehyde group ii) Carboxylic acid	½, ½	
	b) Acetic / Ethanoic acid is formed.It is an oxidizing agent	½ , ½	3
Q8.	Ethanol, C_2H_5OH /C_2H_6O	½, ½	
	$C_2H_5OH \rightarrow CH_2 = CH_2 + H_2O$	1	
	Ethene	½	
	Role of conc H_2SO_4− dehydrating agent	½	3
Q9.	a) Configuration − 2,8,2	½	
	b) Metal, as it can easily loose electrons (from outer most orbit)	½, ½	
	c) X Y X Z 2 2 2 1	½	
	Compound - XY XZ_2	½ , ½	3

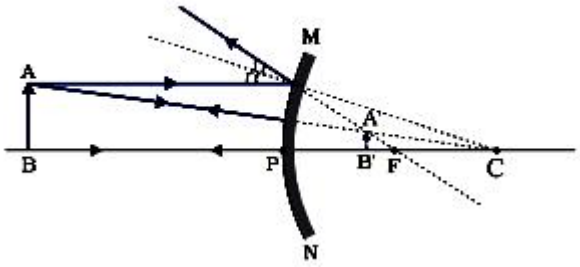
Q10.	i)Aim of classification−systematic study of the known elements ii)Basic property—Atomic number iii)Properties of the elements are a periodic function of their atomic numbers. iv)Metals on the left v)Non–metals on the right. vi)Metalloids at the border of metals and beginning of non-metals	6x ½	3
Q.11 .	i)Each piece regenerates into a new planaria ii)Its filaments breaks into smaller pieces/fragments and each fragment gives rise to a new filament. iii)It releases spores which germinate into new mycelium in moist conditions.	1 1 1	3
Q.12	i)Stamen and Carpel ii)located in the flower iii)carpel is made of three parts − the bottom swollen part is ovary , middle elongated part is the style ,terminal sticky part is stigma.	½, ½ ½ 3x ½	3
Q13.	Two major processes namely formation of gametes and fusion of gametes constitute sexual reproduction 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 .	1 4x ½	3
Q14.	i) Speciation – origin of new species from pre−existing ones. ii) Genetic drift is flow of genes from one population to another by chance factor or randomly .Over generation it will accumulate different changes in different population iii) In addition, natural selection operates differently in different population selecting the fittest /favorable feature in both the population. Over a long period of time the differences in the two population may became so drastic that they no longer reproduce with each other and thus give rise to new species.	1 1 1	3

Q15.

• 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.	2x1
ii)It appears in more numbers.	ii)It appears in less number.	

	• 75% of the plants were with round seeds.	1	3

Q16. Convex mirror ½



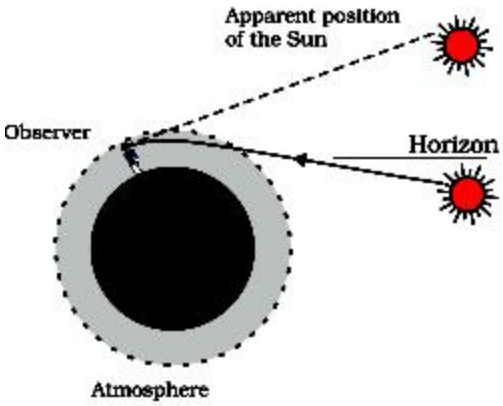
1

Use of convex mirror—as rear view mirror in vehicles ½

Why—always gives erect image with large field of view 1 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 1

(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) 1

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

Q19. 2

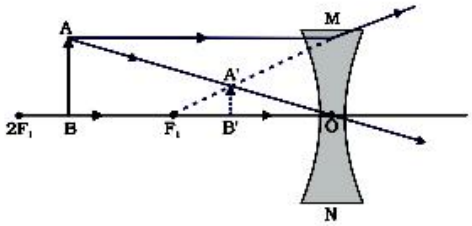
$f = -25\text{cm}; \quad h_1 = 10\text{cm}; \quad v = -20\text{cm}; \quad u = ?$

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

$$\Rightarrow u = \frac{vf}{f - v} = \frac{-20\text{cm} \times -25\text{cm}}{-25\text{cm} - (-20\text{cm})}$$ 1

$$= \frac{500}{-5} = -100\text{cm}$$ ½

$$h_2 = \frac{v}{u} \times h_1 = \frac{-20\text{cm}}{-100\text{cm}} \times 10\text{cm} = +2\text{cm}$$ erect image 1



2 5

Q20. a) Reasons − i) Pea plant is small and easy to grow.
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) 2x ½

b) Contrasting characters ;
Round /Wrinkled seeds
Tall/Short plants
White /purple flowers
Green / yellow seeds (or any other) (any two) 2x ½

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 . 1

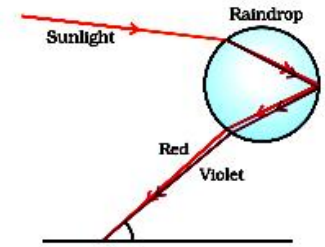
On selfing F1, the hidden characters reappeared in just 25% of the offsprings and the other 75%shared the characters expressed in F1. 1

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 5

Q21. 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 constituent colors bend through different angles with respect to the incident ray and hence are separated. 1

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

Q.22

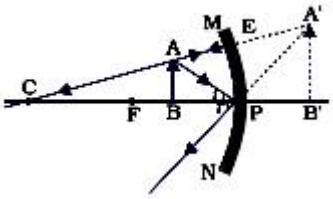
f_a = 10 cm; f_b = 15 cm; f_c = 20 cm

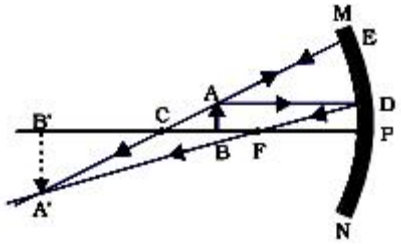
u_1 = 10 cm; u_2 = 20 cm; u_3 = 30 cm

a) m= -1 means $u = 2f$, for A → u_2 , for B → 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.

- 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

Q.24 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

SECTION – B

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

9x1 — 9

Q34.

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

Q35. Physical properties− i) smell like vinegar, ii)colourless liquid — 2x1/2

Chemical propertirs − i) turns blue litmus red, ii)gives brisk effervescence with sodium carbonate. — 2x1/2 — 2

Q36. Binary fission ½

Initial stage final stage ,

2 x ½

process starts with elongation of nucleus ½ 2