

Summative Assessment II (March- 2017)

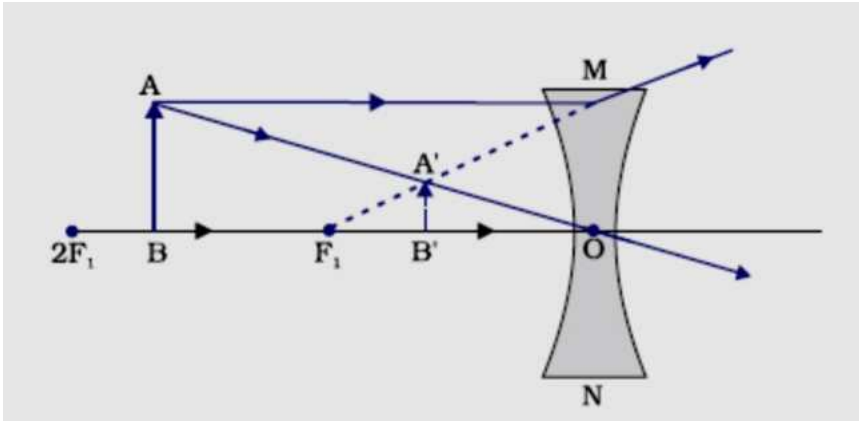
Marking Scheme

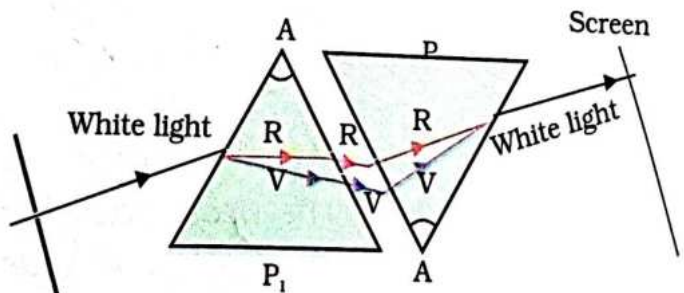
Class X – Outside Delhi

Code No. 31/1

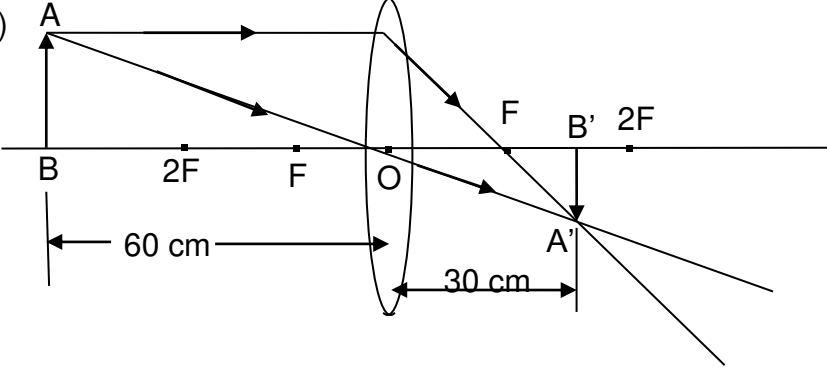
Q. No.	Expected Answer / Value point Section - A	Distribution of marks	Marks
1.	C_2H_6 , C_3H_8	$\frac{1}{2} + \frac{1}{2}$	1
2.	Creation of DNA copy / Replication / Copying of DNA	1	1
3.	1000000 J	1	1
4.	<ul style="list-style-type: none"> • Virtual • Erect • Diminished • On the same side as the object / or any other characteristic 	$\frac{1}{2} \times 4$	2
5.	<ul style="list-style-type: none"> • Conserving forests helps in (i) retaining sub soil water and (ii) checking floods / any other • Conserving wild life helps in (i) maintaining ecological balance and (ii) protecting the nature (or any other) 	$\frac{1}{2} \times 4$	2
6.	<ul style="list-style-type: none"> • Water stored during rainy season can be used as and when required by the community. • Ground water level increases due to recharging. 	1 + 1	2
7.	$ \begin{array}{c} \text{H} \quad \text{H} \\ \quad \\ \text{H} - \text{C} - \text{C} - \text{OH} \\ \quad \\ \text{H} \quad \text{H} \end{array} $ <p>Ethene is produced</p> $ \text{CH}_3\text{CH}_2\text{OH} \xrightarrow[443\text{K}]{\text{Conc. H}_2\text{SO}_4} \text{C}_2\text{H}_4 + \text{H}_2\text{O} $ <p>Conc. H_2SO_4 acts as a dehydrating agent.</p>	<p>1</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>$\frac{1}{2}$</p>	3
8.	<p>Esterification – A process in which an alcohol and a carboxylic acid react in the presence of conc. H_2SO_4 to form an ester.</p> $ \text{CH}_3\text{COOH} + \text{C}_2\text{H}_5\text{OH} \xrightarrow{\text{Conc. H}_2\text{SO}_4} \text{CH}_3\text{COOC}_2\text{H}_5 + \text{H}_2\text{O} $	<p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p>	

	<ul style="list-style-type: none"> Saponification – A process in which an ester reacts with sodium hydroxide to form sodium salt of an acid and alcohol / an ester reacts in the presence of an acid or a base to give back the alcohol and carboxylic acid. $\text{CH}_3\text{COOC}_2\text{H}_5 + \text{NaOH} \longrightarrow \text{C}_2\text{H}_5\text{OH} + \text{CH}_3\text{COONa}$ Esters are used in ice creams / perfumes Saponification process is used in preparation of soap. 	<p>1/2</p> <p>1/2</p> <p>1/2</p> <p>1/2</p>	3
9.	<ul style="list-style-type: none"> Periods – 7, Groups – 18 Metallic character decreases along the period because effective nuclear charge increases on the valence electrons hence decrease in tendency to lose electrons. Metallic character increases down a group because effective nuclear charge experienced by valence electrons decrease, hence tendency to lose electron decreases. 	<p>1/2 + 1/2</p> <p>1/2 + 1/2</p> <p>1/2 + 1/2</p>	3
10.	<ul style="list-style-type: none"> Aluminium (Al) Reason – Valency of Na is 1, Mg is 2, Al is 3 Sodium (Na) Reason – As we move from left to right in a period, the atomic radius decreases / increase in nuclear charge pulls the electrons closer to the nucleus reducing the atomic size. Sodium (Na) Reason – Reactivity decreases on moving from left to right in a period / any other reason 	<p>1/2</p> <p>1/2</p> <p>1/2</p> <p>1/2</p> <p>1/2</p> <p>1/2</p>	3
11.	<ul style="list-style-type: none"> For continuation of species / perpetuation of species It promotes diversity of characters / helps to show the variations which enhances the survival chances. Increases population of a species / any other answer 	<p>1</p> <p>1</p> <p>1</p>	3
12.	<ul style="list-style-type: none"> Vegetative propagation – A process in which any vegetative part of a plant (root, stem or leaf) gives rise to a new plant under appropriate conditions. Two advantages :- (i) Large number of plants obtained in a short interval. (ii) Propagation of seedless plants is made possible / any other advantage. Two disadvantages :- (i) No genetic variations, so, less adaptability to the environment. (ii) The disease of plants gets transferred to the offsprings. 	<p>1</p> <p>1/2</p> <p>1/2</p> <p>1/2</p> <p>1/2</p>	3
13.	<ul style="list-style-type: none"> Three techniques – Barrier method, chemical method, surgical method Chemical method It maintains health of the woman, parents can provide more attention to children / more resources are available to the family / any other. 	<p>1/2 x 3</p> <p>1/2</p> <p>1/2 x 2</p>	3

14.	<ul style="list-style-type: none"> • In Mendel's experiment, when pure tall pea plants were crossed with pure dwarf pea plants, only tall pea plants were obtained in F₁ generation. • On selfing the pea plants of F₁ generation both tall and dwarf pea plants were obtained in F₂ generation. • Reappearance of the dwarf pea plants in F₂ generation proves that the dwarf trait was inherited but not expressed in F₁ generation. <p>Note:- If explained with flow chart with proper description, full marks be awarded.</p>	1 1 1	3
15.	<ul style="list-style-type: none"> • Different life forms have evolved during the course of evolution. Classification deals with the grouping of these life forms into groups and sub groups based on similarities and differences. • The more characteristics any two species have in common, more closely they are related. • Thus classification helps in tracing the evolutionary relationship between the two organisms. Hence, evolution and classification are interlinked. 	1 1 1	3
16.	<p>Concave / diverging lens.</p>  <p>Direction of rays</p> $f = \frac{1}{P},$ $P = -10D,$ $f = \frac{1}{-10D} = -0.1 \text{ m} / -10 \text{ cm}$	1/2 1 1/2 1/2 1/2	3

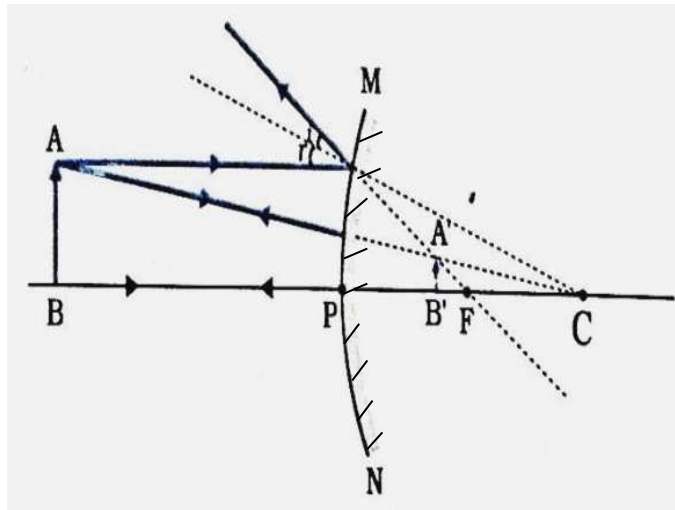
17.	<p>Different colours of light bend through different angles with respect to the incident ray / different speed of different colours of light in glass / different values of refractive index of glass for different colours of light.</p>  <p>Direction of ray & labelling</p>	<p>1</p> <p>1</p> <p>$\frac{1}{2} + \frac{1}{2}$</p>	3
18.	<p>a) Two ways of creating awareness</p> <ul style="list-style-type: none"> • Door to door campaigning • Nukkad natak / any other method. <p>b) Rain water harvesting with explanation / preventing over extraction of underground water / any other method</p>	<p>1 + 1</p> <p>$\frac{1}{2} + \frac{1}{2}$</p>	3
19.	<ul style="list-style-type: none"> • Compounds of hydrogen and carbon • Alkanes – C_nH_{2n+2} • Alkenes – C_nH_{2n} • Alkynes – C_nH_{2n-2} • . $ \begin{array}{c} \text{H} \\ \\ \text{H}-\text{C}-\text{H} \\ \\ \text{H} \end{array}, \quad \begin{array}{c} \text{H} \quad \text{H} \\ \quad \\ \text{H}-\text{C}=\text{C}-\text{H} \end{array}, \quad \text{H}-\text{C}\equiv\text{C}-\text{H} $ <ul style="list-style-type: none"> • Addition reaction / hydrogenation $ \begin{array}{c} \text{R} \quad \quad \text{R} \\ \diagdown \quad \diagup \\ \text{C}=\text{C} \\ \diagup \quad \diagdown \\ \text{R} \quad \quad \text{R} \end{array} \xrightarrow[\text{H}_2]{\text{Ni/Pd catalyst}} \begin{array}{c} \text{R} \quad \text{R} \\ \quad \\ \text{H}-\text{C}-\text{C}-\text{H} \\ \quad \\ \text{R} \quad \text{R} \end{array} $	<p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2} \times 3$</p> <p>$\frac{1}{2}$</p> <p>1</p>	5

20.	<p>(a) Functions :</p> <p>(I) Ovary:- (i) Production of female hormones / estrogen / progesterone (ii) Production of female gamete/egg/ germ cells</p> <ul style="list-style-type: none"> • (II) Uterus:- (i) Implantation of zygote / embryo (ii) Nourishment of developing embryo • (III) Fallopian tube :- (i) Transfer of female gamete from the ovary (ii) Site of fertilisation <p>(b) Structure of placenta :- It is a special disc like tissue embedded in mother's uterine wall and connected to the foetus / embryo.</p> <p>Functions of placenta :- It provides a large surface area for glucose and oxygen / nutrients to pass from mother's body to the developing / developed embryo / foetus and also helps in passing the waste from the foetus / embryo to the mother's body.</p>	<p>$\frac{1}{2} + \frac{1}{2}$</p> <p>$\frac{1}{2} + \frac{1}{2}$</p> <p>$\frac{1}{2} + \frac{1}{2}$</p> <p>1</p> <p>1</p>	5
21.	<ul style="list-style-type: none"> • Acquired traits – Traits which develop in the life time of an individual and do not pass to the progeny. Example- Learning a skill such as dance / music / loss of body parts / weight / any other example. • Inherited traits – Traits present in the gamete / germ cells which can be seen in the progeny. Example – Skin colour / eyebrows / any other example. • Reasons – Traits / characteristics acquired during one's life time do not bring any change in the DNA of the reproducing cells / germ cells. Examples - Decrease in body weight of beetles due to starvation do not pass on to the next generation because there is no change in the germ cells of beetles. 	<p>1</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>1</p>	5

<p>22.</p>	<p>a) $f = 20 \text{ cm}$ Sl. No. 3, Since $u = -40 \text{ cm}$ and $v = +40 \text{ cm}$, it may be concluded that object is at $2F$</p> <p>b) Sl. No. 6</p> <p>When $u = -15 \text{ cm}$, the object is between optical centre and principal focus. So image is virtual and it forms on the same side as the object. Hence, v should be $-ve$, but here it is $+ve$ ($+120 \text{ cm}$)</p> <p>c)</p>  <p>Direction of rays</p> <p>Magnification, $m = \frac{v}{u} = \frac{30 \text{ cm}}{-60 \text{ cm}} = -0.5 / -\frac{1}{2}$</p>	<p>$\frac{1}{2}$</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p>	<p>5</p>
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23.

a) Convex / diverging mirror)



Direction of rays

Use:- As a rear view mirror / any other use

Reason :- Always give erect and diminished image / Large field of view

(b) The radius of the sphere of which the mirror forms a part / The distance between pole and center of curvature of a mirror.

Nature of the mirror – convex / diverging mirror

$$R = 2f = 24 \text{ cm}$$

$$\therefore f = +12 \text{ cm}$$

1/2

1

1/2

1/2

1/2

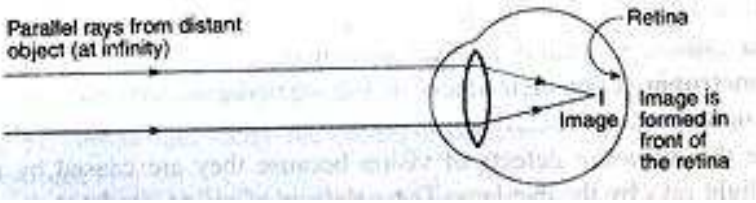
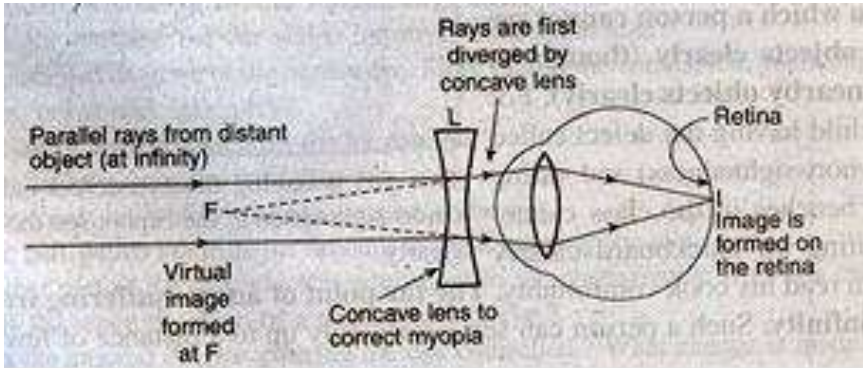
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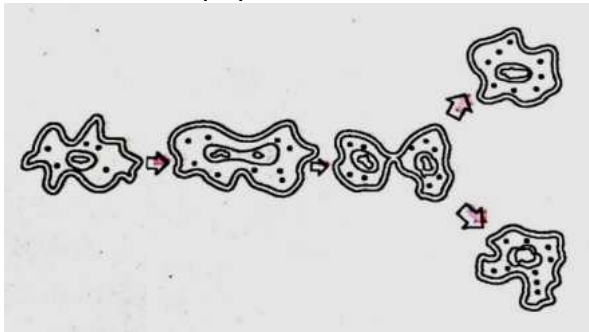
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5

24.	<p>a)</p> <ul style="list-style-type: none"> excessive curvature of the eye lens elongation of the eyeball <p>i)</p>  <p>ii) Concave / diverging lens</p>  <p>b) $f = -5 \text{ m}$ (since lens is concave)</p> $P = \frac{1}{f(\text{metre})}$ $P = -0.2 \text{ D}$	<p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p>	<p>5</p>
Section - B			
25.	D	1	
26.	C	1	
27.	D	1	
28.	B	1	
29.	C	1	
30.	D	1	
31.	D	1	
32.	B	1	
33.	C	1	9

34.	<ul style="list-style-type: none"> Vegetable oil / fat and sodium hydroxide Red litmus paper turns blue. 	1 1	2
35.		$\frac{1}{2} \times 4$	2
36.	<p>a) Note: For part (a) $\frac{1}{2}$ mark to be awarded to every student</p> <p>b) Size of the image increases</p> <p>c) Intensity / brightness of the image decreases</p> <p>d) No distinct image is formed. Only a patch of light is seen.</p>	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	2

Outside Delhi -31/1