Naruto

“I don't quit.. I don't run.. I never go back on my word ..that's my ninja way.”

@QuoteTheAnime

Section - A (Physics - 10 Marks)

Ques-1

(a) Between the pole and the focus of the mirror [✓]

Ques-2.

$P = -1.5\,D.$

$P = \frac{1}{f}$

$-1.5 = \frac{1}{f}$

$f = \frac{1}{-1.5}$

$f = \frac{10}{-15}\,2$

$f = \frac{-2}{3}\,m.$

$f = \frac{-2}{3} \times 100\ cm.$

$f = -66.6\,cm.$

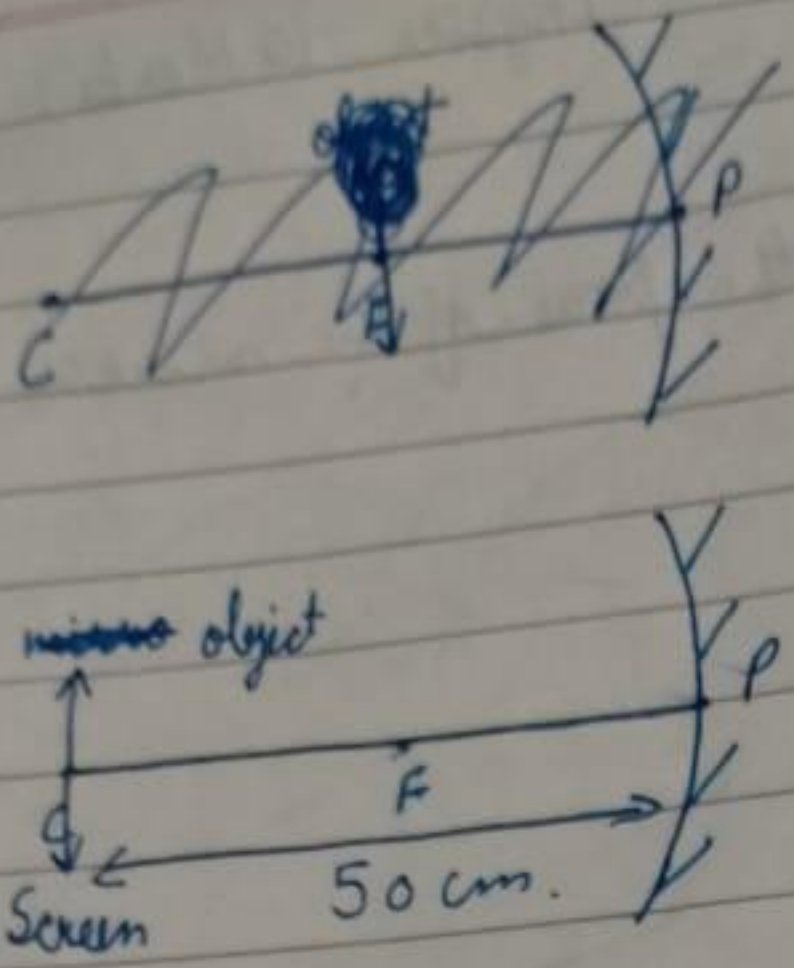
it is a concave ~~lens~~ lens.

(c) -66.6 cm, concave lens [✓]

Ques-3. (a)

Ans-(a) The mirror is concave because the image of object produced by the mirror is taken on screen which means ~~the~~ that the image is real, and no real image is formed by convex mirror.

(b)



magnification of image $= -1 = \frac{h'}{h}$.

$\Rightarrow \frac{h'}{h} = -1$.

$\Rightarrow h' = -h$. — (1)

By equation (1) we can say that the size of the object is same but the ~~object is inverted~~ $^{6}-^{9}$ shows that the image is inverted and we know that the object and the image are of same size and the image is real and inverted and this situation only occurs when the object is placed at centre of curvature of the mirror.

$\Rightarrow PC = 50$ cm.

$\Rightarrow$ ~~C 50 cm~~. $\Rightarrow v = u$ {as $h' = -h$ & $\frac{h'}{h} = \frac{-v}{u}$}.

~~the object is~~

$\Rightarrow$ the distance of image and the object is 0 cm as $v = u$.

(c) we know that focal length of the mirror is $\frac{1}{2}$ of centre of curvature.

$= \frac{1}{2} \times 50$ cm $= 25$ cm.

Ques-4.
Ans-

25 cm is the focal length of the image.

Ques-4.

Ans- ~~to b~~ According To The Question:-

The image of the object made by the mirror is real and inverted and real and inverted images are only formed in case of a concave lens.

The magnification is -1

$\Rightarrow m = \frac{-v}{u} = \frac{h'}{h}$.

$\Rightarrow -h = h'$

$\Rightarrow$ The object and the image are of same size and the '$-$' sign shows that the image is inverted.

$\Rightarrow v = u$. { as the $\frac{h'}{h} = \frac{-v}{u}$ and $-h = h'$ }.

(i) distance of image from mirror = 40 cm.

$\Rightarrow v = 40$cm.

but $v = u$ (proved above).

$\Rightarrow$ distance of object from mirror is also 40 cm.

(ii) if the object is moved to 20 cm then the image would be formed at infinity.

(iii) Because radius of spherical mirror = 40 cm and

focal length $= \frac{1}{2} \times$ radius $= \frac{1}{2} \times 40 = 20$cm.

$\Rightarrow$ Focus is at a distance of 20 cm from the mirror.

$\Rightarrow$ The object is placed at the focus of the mirror and we know that when object is placed on the focus of a concave mirror the image is formed at infinity.

(W)

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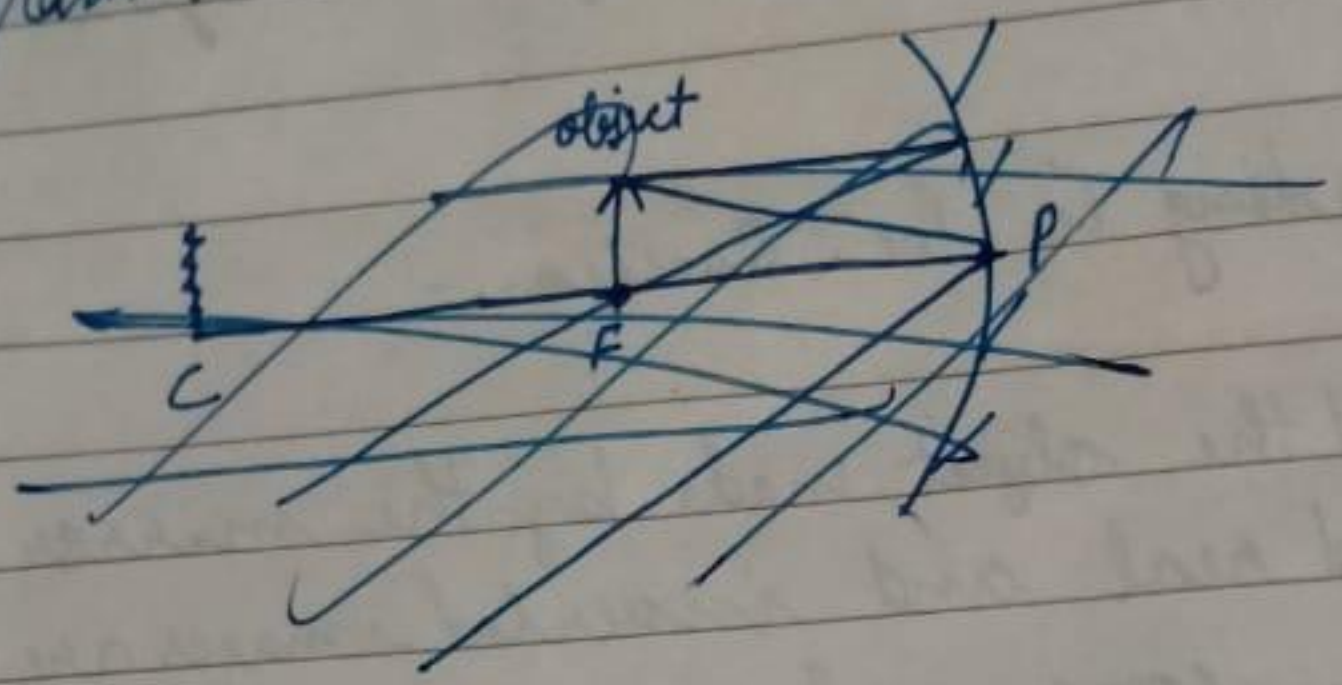
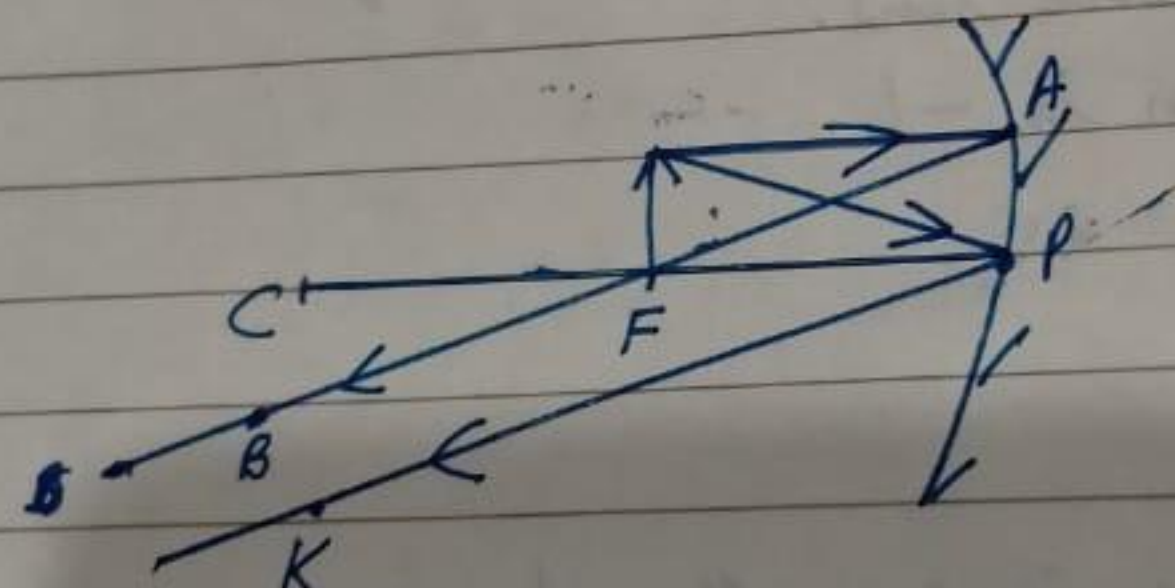
Diagram.





AB || PK.

Section - B (Chemistry) - 10 marks.

Ques-1

(d) (i) and (iv) ✓

Ques-2.

(c) A is true but R is false ✓

Ques-3.

(a) (i) only.

Ques-4.

(a) the nature of SO_2 is acidic and when dissolved in water there will be a formation of a dilute and weak sulphurous acid (H_2SO_3).

(b) Na_2O is basic in nature and when dissolved in water there will be formation of a very strong base NaOH or Sodium Hydroxide.

Ques-5.

(a)(i) corrosion:- when a metal is exposed to humid climate or water, there is a black-brownish layer on the metal, this layer is that metal's oxide formed due to the reaction between them, this process is called corrosion and the metal is said to corrode. It weakens the metal.

the chemical equation of corrosion of iron is:-

$$3Fe + H_2O \longrightarrow Fe_3O_4 + H_2.$$

(6)

(ii) Rusting of iron.

containing oil or fats.

(8) (b) (i) When food is exposed to humid climate and the food reacts with the oxygen present in the atmosphere resulting in chemical reaction ~~due to [illegible] their~~ this is called rancidity.

Damage caused by rancidity is :-

(i) change in smell

(ii) ~~The~~ change in taste and it becomes ~~unedible~~ not eatable.

(ii) Two methods ~~of~~ for preventing rancidity are :-

(i) keeping food in air-tight containers.

(ii) ~~use of filling nitrogen gas in~~

use of nitrogen gas in filling ~~packets~~ packets.

Section - A (Physic - 10 marks).

Ques-1
Ans- (a) If both Assertion and Reason are true and Reason is correct explanation of Assertion.

Ques-2.
Ans - (c) blue ✓

Ques-3
Ans - ~~Angle of incidence and angle of incidence~~ ✓
(c) both (a) and (b) ✓

Ques-4.
Ans - (a) violet and red respectively. ✓

Ques-5
Ans-(d) ~~internal~~ atmospheric refraction of light by different layers of atmosphere of varying refractive indices

Ques-6
Ans- The Two conditions essential for total internal reflection are:-

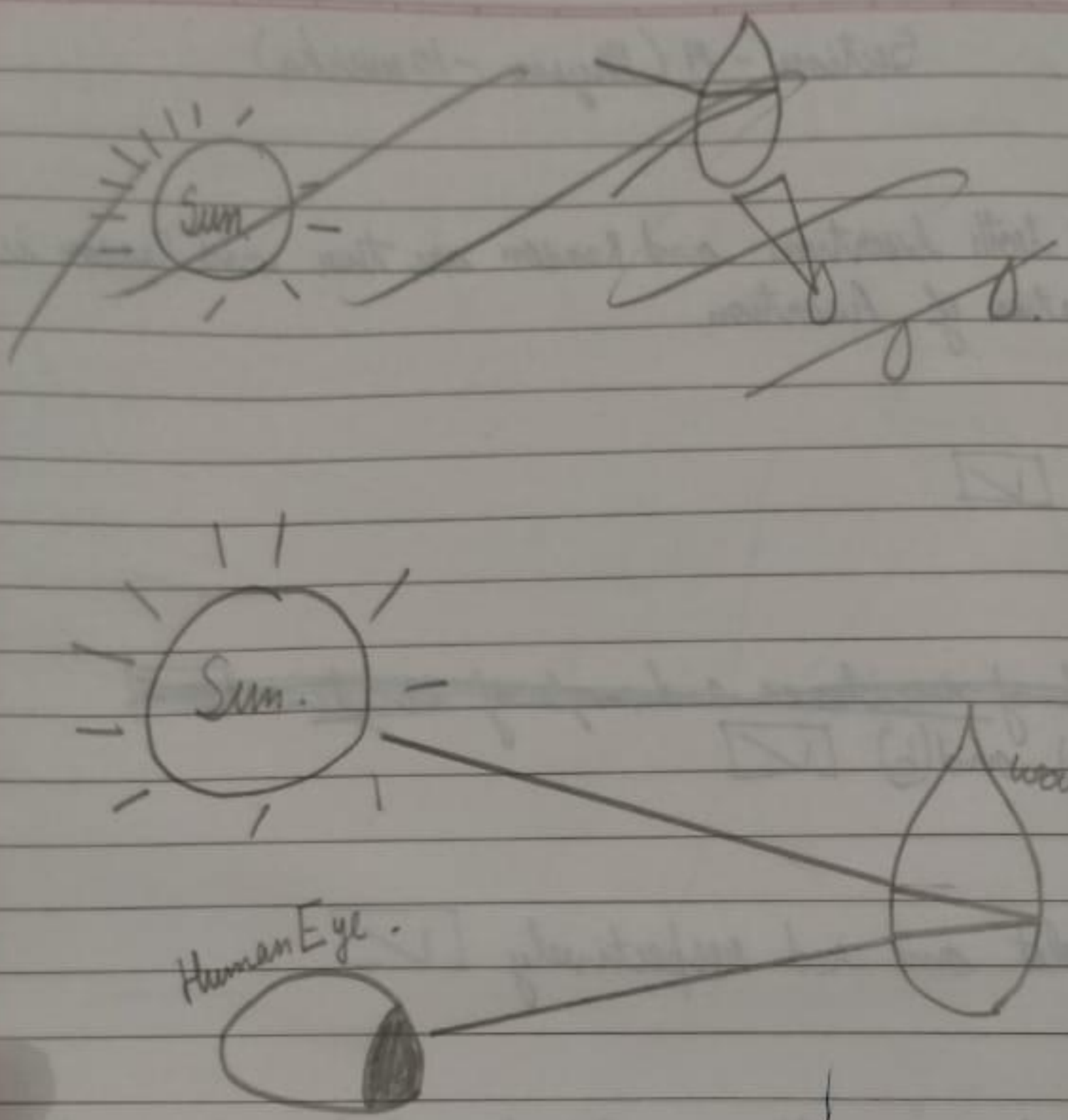
(i) The light must travel from a denser medium to a rarer medium.

(ii) The angle of incidence must be greater than the critical angle for a pair of medium.

(2)

Ques -7

Ans :-



Formation of rainbow :-

After rainfall we can see a beautiful band of seven colour, this is because when the white light from the sun enter a water droplet then the light refracts because of variation in refractive index and the water droplet acts as a glass prism. The white light is then reflected internally and reaches our eye as a band of seven colour. This is the process involved in the formation of rainbow. We can see a rainbow on a sunny day if we stand in front of a fountain in opposite direction to the sun.

Ques -1
Ans - (d) weak

Ques -2
Ans - (a) (i)

Ques -3
Ans - (a)

Ques -4
Ans - The ch by

Ques -5
Ans - (a) C

(b). M

(c)

(d). M

(e)

Section - B (Chemistry - 10 marks).

Ques - 1
Ans - (d) weak acid and strong base ✓

Ques - 2
Ans - (a) (i) and (ii) ✓

Ques - 3
Ans - (a) less than 7 ✓

Ques - 4
Ans - The acid present in ant sting is Formic acid and its chemical formula is CH_2O_2. The method to get relief is by using an antacid.

Ques - 5
Ans - (a) $Ca(OH)_2$ combines with ~~chlorine~~ Cl_2 to form bleaching powder.

(b) $NaCl$, NH_3, H_2O and CO_2 are the four substances utilized in the production of washing soda.

(c) $2\,CaSO_4 \cdot H_2O$ is the compound which represents Plaster of Paris.

(d) $NaHCO_3$ is the compound ~~which~~ that is a part of baking ~~soda~~ powder.

(e) $NaHCO_3$ is the compound that is used as ~~a~~ an antacid.

Ques-4 it's kx.

Name - Kushagar

Class - X C

Section - A

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Ques-1

Ans-

5	5005
11	1001
13	91
7	7
	1

(b) 4 [✓]

Ques-2.

Ans- (c) $(2 \times 5)^n$

Ques-3

Ans- $3x^3 - 5x^2 + 8x - 12$.

~~$\alpha + \beta + \gamma =$~~

$\alpha \times \beta \times \gamma = -\frac{d}{a}$.

$= \frac{12}{3}$

(a) 4 [✓]

Ques-4.

Ans- one of the zero $= -3$.

$\Rightarrow (k-1) \times (-3)^2 + k \times -3 + 1 = 0$.

$\Rightarrow (k-1)\, 9 - 3k + 1 = 0$

5

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$\Rightarrow 9k - 9 - 3k + 1 = 0$

$\Rightarrow 6k - 8 = 0$

$\Rightarrow k = \frac{8}{6} = \frac{4}{3}$

(b) $\frac{4}{3}$ ✓

Ques - 5

Ans - (c) intersecting or coincident ✓

Ques - 6.

Ans - (d) 2 or 5 ✓

Ques - 7

Ans - $\alpha + \beta = -\frac{(c-a)}{b-c}$ $\quad$ (B) $(b-c)x^2 + (c-a)x + (a-b)$

$= 2\beta$

$\alpha \times \beta = \frac{a-b}{b-c}$

$= \beta^2$

$\beta = -\frac{(c-a)}{2(b-c)}$

$\left(\frac{-(c-a)}{2(b-c)}\right)^2 =$

We know that 2 roots are equal when $(b - 4ac)$ is C

$\pm$

$(c-a) \pm 4 \times (b-c)(a-b) = 0$

$c - a \pm 4[ab - b^2 - ac + bc] = 0$

$c - a + 4ab - 4b^2 - 4ac + 4bc = 0.$

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Ques - 8
Ans -

$2x + 5y = 3.$
$6x + 15y = 12.$

$\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}.$

$= \frac{2^1}{6_3} = \frac{5^1}{+5_3} \neq \frac{3}{12_4}$

$= \frac{1}{3} = \frac{1}{3} \neq \frac{1}{4}.$

$\Rightarrow$ & Parallel lines as it is inconsistant.

Ques - 9
Ans - Let the number be x & y.

$HCF(x, y) = 15.$
$xy = 1800.$

we know that product of two no. is equal to the HCF & LCM of them.

$= x \times y = HCF \times LCM.$
$1800 = 15 \times LCM$
$LCM = \frac{1800^{120}}{15_1}.$

$LCM = 120.$

Ques-10
Ans- $x^2 - 2x + 5$.

we know that if the value of $(b^2 - 4ac)$ is less than zero then the equation has no real roots.

$\Rightarrow b^2 - 4ac$.
$= 4 - 4 \times 1 \times 5$.
$= 4 - 20$
$= -16$.

Hence Proved!!!

Ques-11. Section - B.
Ans- 615 and 963.

615 — 6 = 609
963 — 6 = 957.

HCF of 609 and 957
using Euclid's Division Lemma.
$957 = 609 \times 1 + 348$.
using EDL.
$609 = 348 \times 1 + 261$.
using EDL.
$348 = 261 \times 1 + 87$.
using EDL.
$261 = 87 \times 3 + 0$.

HCF = 87.

87 is the highest number which divides 615 & 963 & leaves 6 as remainder.

Rough work

609 | 957 | 1
609
348 | 609 | 1
348
261 | 348 | 1
261
87 | 261 | 3
261
0

HCF = 87.

Ques -12.

Ans- $3x - y = 5$.- (1) $5x - y = 11$. - (2)

Subtracting (2) from (1).

$$\begin{array}{r} 3x - y = 5 \\ 5x - y = 11 \\ - \quad + \quad - \\ \hline -2x = -6 \end{array}$$

$$x = \frac{+6}{+2}$$

$$x = 3.$$

Ques-13

Ans- Let the number be x.

reciprocal of number $= \frac{1}{x}$.

A.T.Q. :-

$$x + \frac{1}{x} = \frac{10}{3}.$$

$$\Rightarrow \frac{x^2 + 1}{x} = \frac{10}{3}.$$

$$\Rightarrow 3(x^2 + 1) = 10x$$

$$\Rightarrow 3x^2 + 3 = 10x.$$

$$\Rightarrow 3x^2 - 10x + 3 = 0.$$