

कुल पृष्ठ संख्या-24 (कवर पेज सहित)

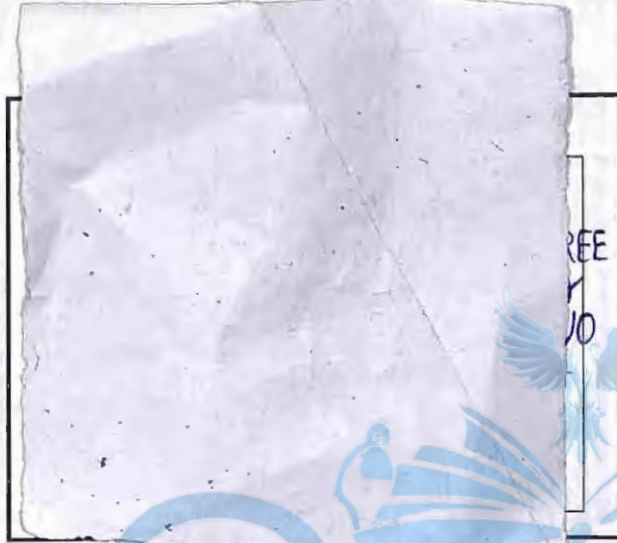
क्रम संख्या

2027538



माध्यमिक शिक्षा बोर्ड, राजस्थान, अजमेर

माध्यमिक परीक्षा



नोट :- परीक्षार्थी उपरोक्त के ओतोरक्त उत्तर पुस्तिका के अन्य किसी भी भाग में अपना नामांक नहीं लिखें।

माध्यम - हिन्दी ☐ अंग्रेजी ☒

विषय Science / विज्ञान

परीक्षा का दिन Tuesday / मंगलवार

दिनांक 05-04-2023

नोट :- परीक्षार्थी के लिए आवश्यक निर्देश इस पृष्ठ के पिछले भाग पर उल्लेखित हैं। जिन्हें सावधानी पूर्वक पढ़ लें व पालना अवश्य करें।

- परीक्षक हेतु निर्देश :- (1) परीक्षक को उपरोक्त सारणी अनुसार प्राप्तांक भरना अनिवार्य हैं, अन्यथा नियमानुसार दंडित किया जायेगा।
(2) परीक्षक उत्तर पुस्तिका के अन्दर के पृष्ठों के बायीं ओर निर्धारित कॉलम में लाल इंक से अंक प्रदत्त करें।
(3) कुल योग भिन्न में प्राप्त होने पर उसे पूर्णांक में ही परिवर्तित कर अंकित करें (उदाहरणार्थ : 15 ¼ को 16, 17 ½ को 18, 19 ¾ को 20)

प्रश्नवार प्राप्तांकों की सारणी (परीक्षक के उपयोग हेतु)			
प्रश्नों की क्रम संख्या	प्राप्तांक	प्रश्नों की क्रम संख्या	प्राप्तांक
1	12	19	3
2	6	20	3
3	12	21	4
4	2	22	4
5	2	23	4
6	2	24	
7	2	25	
8	2	26	
9	2	27	
10	2	28	
11	2	29	
12	2	30	
13	2	31	
14	2	योग	80
15	2	प्राप्त अंकों का कुल योग (Round off)	
16	2	अंकों में	शब्दों में
17	3	80	3122
18	3		

परीक्षक के हस्ताक्षर सुतोषगुप्ता संकेतांक

01379

प्रमाणित किया जाता है कि इस उत्तर पुस्तिका के निर्माण में 58 जी.एस.एम. ईको मैपलिथो कागज ही उपयोग में लिया गया है। 168/2021



SECTION - A

1

परीक्षक द्वारा
प्रदत्त अंक

प्रश्न
संख्या

परीक्षार्थी उत्तर

1

Q.No.

Ans.

(i)

(D)

(ii)

(A)

(iii)

(C)

(iv)

(A)

(v)

(C)

(vi)

(C)

(vii)

(A)

(viii)

(D)

(ix)

(C)

(x)

(A)

(xi)

(A)

(xii)

(B)

BSER-16/8/2021

6

2.

(i)

Feedback mechanism

(ii)

Electric impulse

(iii)

loss

(iv)

Granga

(v)

Magnification

(vi)

Tungas Tungstan

12

3.

(i)

Neurons.

परीक्षक द्वारा
प्रदत्त अंकप्रश्न
संख्या

परीक्षार्थी उत्तर

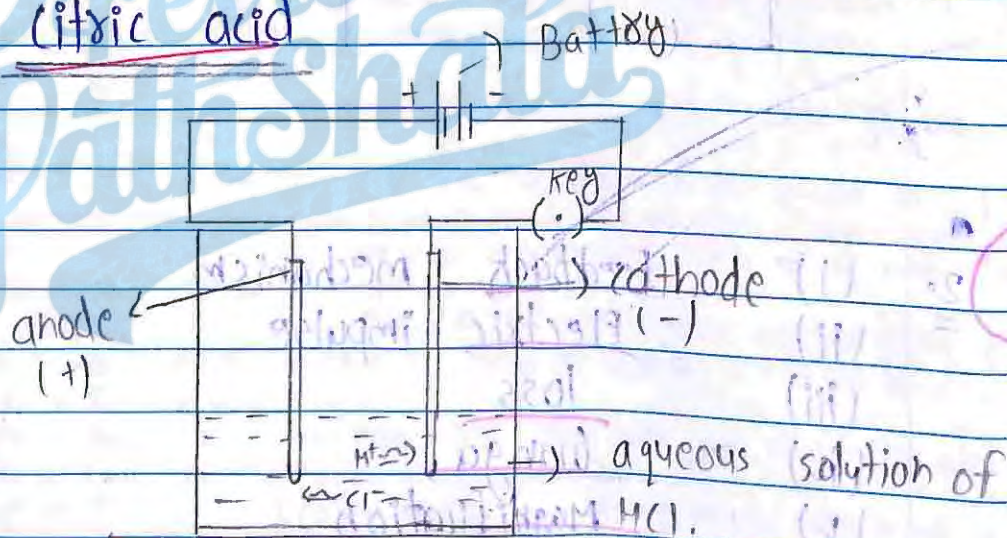
(ii) Pituitary gland.(iii) Chlorofluoro carbon.(iv) Human intestine.

(v) The process in which energy is used to ~~change~~ reuse the material ~~the~~ is called recycling.

'Reuse' is better than it, because energy is required in this process.

(vi) Citric acid

(vii)



viii) Acids are sour in taste, where Bases are bitter in taste.

परीक्षक द्वारा
प्रदत्त अंकप्रश्न
संख्या

परीक्षार्थी उत्तर

(ix) When the pH of mouth become less than 5.6, Tooth-decay ~~starts~~ starts. We use tooth-pastes which neutralise it.

(x) 'Rheostat' can change the resistance of a ~~the~~ circuit, without changing its 'Volt' (potential difference). It is 'Variable resistance'.

(xi) direct current

Alternating current

(i) cannot be send for long distances

(i) can be send for long distances, without energy loss.

(ii) cannot draw desired voltage.

(ii) We can draw desired voltage.

(xii) ~~It~~ 'straight or parallel magnetic field' is produced in a solenoid.

परीक्षक द्वारा
प्रदत्त अंकप्रश्न
संख्या

परीक्षार्थी उत्तर

SECTION - B

4. The role of fossil in the process of evolution :-

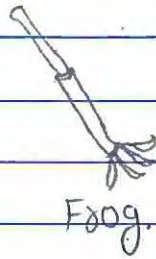
(i) By fossils we can determine that how two organisms are related in their past.

(ii) We can draw the full image with the help of new technology.

5. double circulation :- It means blood pass, two times from the heart, in one circulation. It decreases the possibility of mixing blood. Thus, It enhances the quality of blood. As we need much oxygen, so it is necessary for creatures like human beings.

परीक्षक द्वारा
प्रदत्त अंकप्रश्न
संख्या

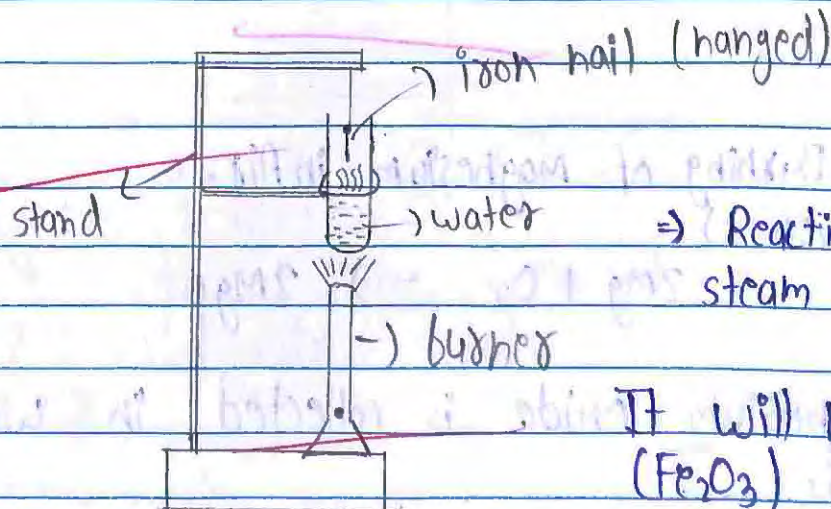
परीक्षार्थी उत्तर

6°

Homologous organs of frog and lizard.

7° Producers :- These are green plants and blue-green algae, which produce food by the use of sunlight, CO_2 , H_2O and in presence of chlorophyll, are produce.

Consumers :- These are dependent on producers for their food. They cannot produce their own food. eg. - humans etc.

8°

Reaction of steam and iron.

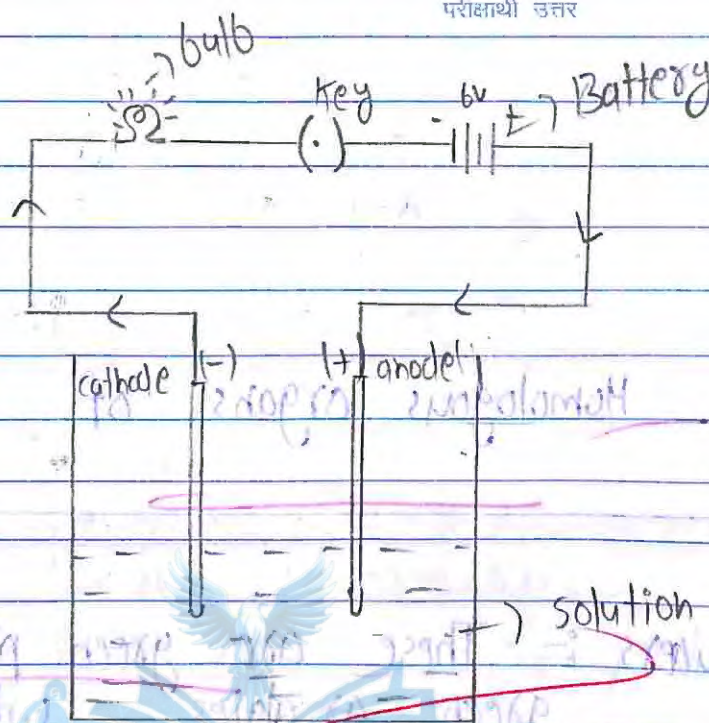
It will make Iron Oxide (Fe_2O_3)



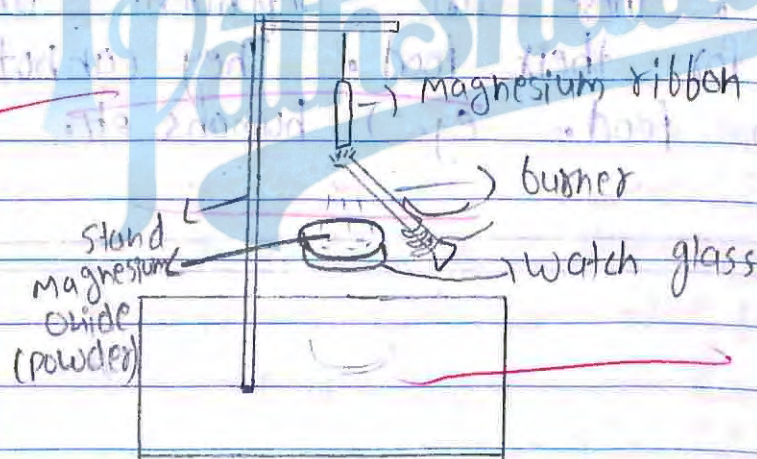
परीक्षक द्वारा
प्रदत्त अंक

प्रश्न
संख्या

परीक्षार्थी उत्तर



checking conductivity of salt solution



Burning of Magnesium in Air.

Reaction :-



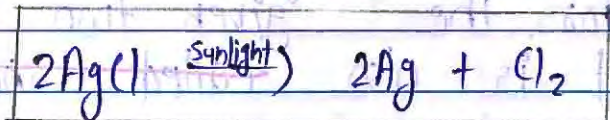
Magnesium oxide is collected in watch glass.

परीक्षक द्वारा
प्रदत्त अंकप्रश्न
संख्या

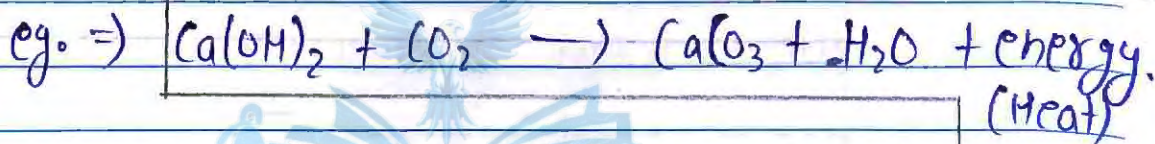
परीक्षार्थी उत्तर

11. Endothermic reaction $\Rightarrow$ The reaction in which energy is absorbed or required for reaction.

eg. $\Rightarrow$



Exothermic reaction $\Rightarrow$ The reaction in which energy is released are called exothermic reaction.



BSER-16/2/2021

12. Ductility $\Rightarrow$ Metals can be beaten into thin wires, this property of metals is called ductility.

The most ductile metal is 'gold'. It is used to make ornaments.

13. Laws of refraction $\Rightarrow$

(i) The incident ray, Refracted ray and the Normal to the point of surface of two media lie on a same plane.

परीक्षक द्वारा
प्रदत्त अंकप्रश्न
संख्या

परीक्षार्थी उत्तर

(ii) The ratio of sine of angle of incidence to sine of angle of refraction is constant for the given two media. it is also called Snell's law.

$$\frac{\sin i}{\sin r} = \text{constant}$$

14. By Ohm's law $\Rightarrow V = IR_{\text{Total}}$ — (1)

Total 'Voltage' $\Rightarrow$

$$V_1 + V_2 + V_3 + V_4 \Rightarrow IR^1 + IR^2 + IR^3 + IR^4$$

As we know in series the total current is equal so,

$$\text{Total Voltage} \Rightarrow I(R^1 + R^2 + R^3 + R^4)$$

in eqn (1) $\rightarrow$

$$[IR_{\text{Total}} \Rightarrow I(R^1 + R^2 + R^3 + R^4)]$$

So, to find total resistance, we should add all the resistance of a series circuit.

परीक्षक द्वारा
प्रदत्त अंकप्रश्न
संख्या

परीक्षार्थी उत्तर

15.

given $\Rightarrow$ current $\Rightarrow 10\text{ A}$ resistance $\Rightarrow 4\Omega$ time $\Rightarrow 2\text{ sec}$ By Joules law of Heating $\Rightarrow$

$$H \Rightarrow I^2 R T$$

$$\text{Heat} \Rightarrow (10)^2 \times 4 \times 2$$

$$= 800 \text{ Joule} \quad \text{Ans}$$

So, total Heat produced in 2 seconds is 800 Joule.

BSE-16/8/2021

16.

Solenoid $\Rightarrow$ When many turns of copper wire insulated on a soft iron core, it looks like cylinder, is called Solenoid.

There are two ways to produce electromagnet:-

(i) by taking it inside the solenoid.

(ii) by moving it around the solenoid.

In both condition the metal will behave like a magnet.



SECTION - C

10

परीक्षक द्वारा
प्रदत्त अंकप्रश्न
संख्या

परीक्षार्थी उत्तर

17.

Events of Photosynthesis :-

(i) Absorption of sunlight and CO_2 from atmosphere.

(ii) Breaking down the water molecule into H_2 and O_2 , and changing light energy to chemical energy.

(iii) Synthesis of glucose in presence of chlorophyll.

These are 3 main events done in the process of photosynthesis.

18.

Mendel plays an experiment of Monohybrid cross, in which he takes tall and short of plant, (TT) for tall plants and (tt) for dwarf plant.

In this cross in F_1 generation all plants were tall, but when he done self pollination in F_2 generation 3 plants were tall and 1 was dwarf.

परीक्षक द्वारा
प्रदत्त अंकप्रश्न
संख्या

परीक्षार्थी उत्तर

He named tall plants as dominant and dwarf as recessive.

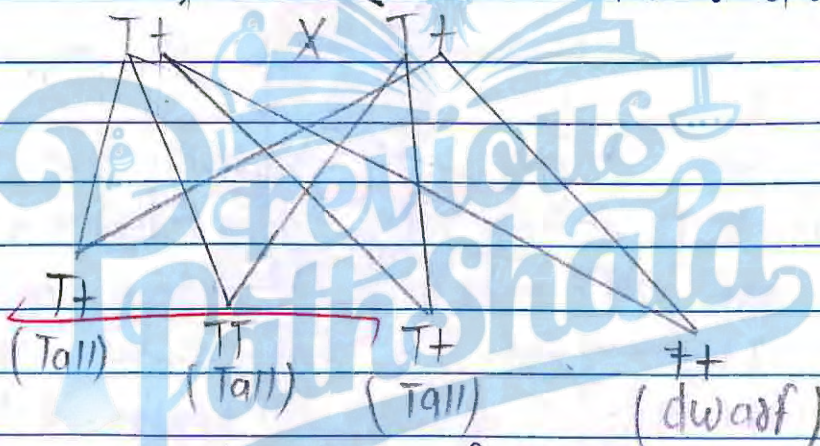
TT (tall) tt (dwarf)

phenotypic ratio $\Rightarrow$

Tt (tall)

3 : 1

Tall : dwarf



$\Rightarrow$ Monohybrid cross of Mendel.

19. Oxidation $\Rightarrow$ The reaction in which gain of oxygen and loss of hydrogen takes place is called oxidation reaction.

eg. $\Rightarrow$

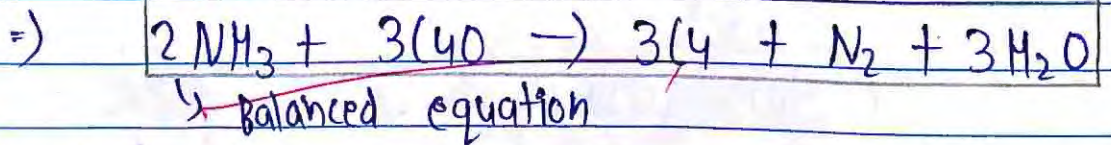
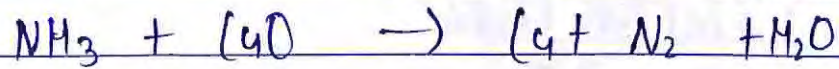


in this reaction carbon is oxidised.

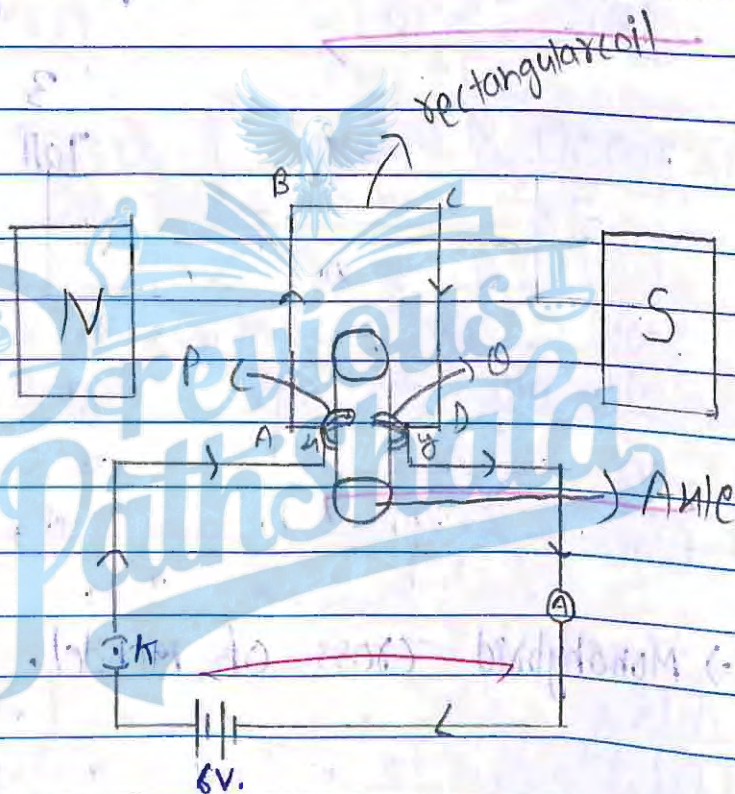
परीक्षक द्वारा
प्रदत्त अंकप्रश्न
संख्या

परीक्षार्थी उत्तर

(ii)



200



principle of electric motor $\Rightarrow$ It works on the principle that, when a current carrying coil is placed in a magnetic field; that then it experiences force.

परीक्षक द्वारा
प्रदत्त अंकप्रश्न
संख्या

परीक्षार्थी उत्तर

Working $\Rightarrow$ In an electric motor a rectangular coil is connected to a circuit, and placed in a magnetic field.

'P' and 'Q' are two split rings which work as a 'commutator', to change the direction of current.

These are connected to two iron brushes 'X' and 'Y', which are joining in the external circuit.

When the current is passed in the coil through battery, in the direction of A to B and C to D. Then it experience a force such that, AB moves downwards and 'CD' moves upwards. At the half rotation 'Q' is connected to 'X' and 'P' to 'Y'.

The current now flowing to DCAB, 'D' to 'C' and 'B' to 'A', which makes it to move in opposite direction.

So, these regular turns make the motor to work.

P.T.O



परीक्षक द्वारा
प्रदत्त अंक

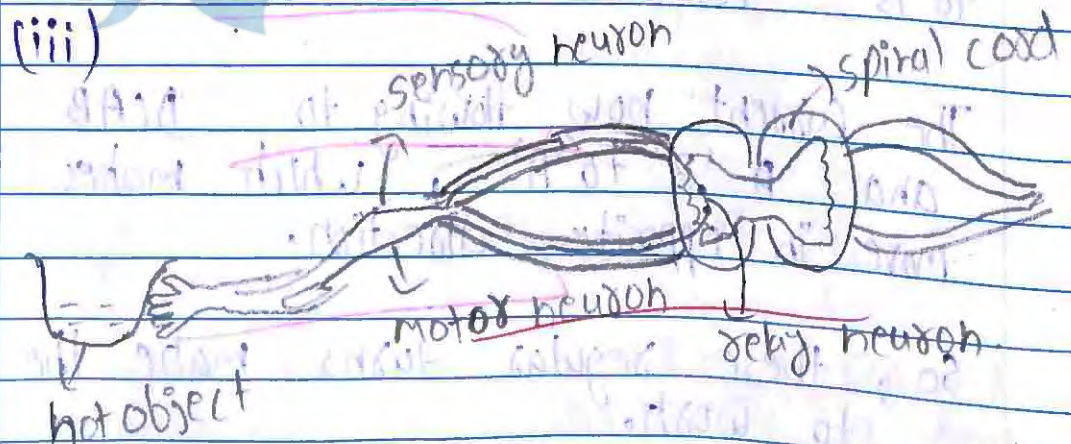
प्रश्न
संख्या

परीक्षार्थी उत्तर

SECTION - D

21. (i) On touching a hot object we move our hand, quickly. This is an example of reflex action.

(ii) As reflex actions are very quick, so, the information of stimuli is not transferred to the brain, instead of this it is transferred to spinal cord. From here a motor nerve carries the response and order to the muscle cell to move. In this way a reflex arc is formed.



labelled diagram of reflex arc.

परीक्षक द्वारा
प्रदत्त अंकप्रश्न
संख्या

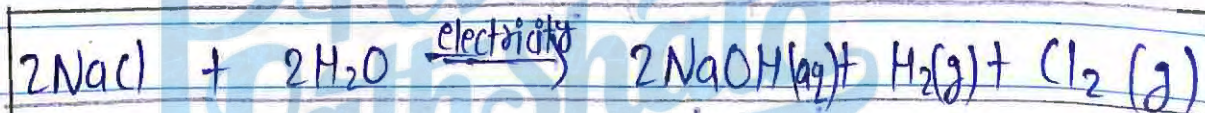
परीक्षार्थी उत्तर

220

(ii)

(P) Gypsum $\rightarrow$ iv) $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ (Q) Bleaching powder $\rightarrow$ iii) CaOCl_2 (R) Baking soda $\rightarrow$ i) NaHCO_3 (S) Plaster of Paris $\rightarrow$ ii) $\text{CaSO}_4 \cdot \frac{1}{2}\text{H}_2\text{O}$

(ii) The reaction will be



in this reaction chlorine and Hydrogen gas is formed.

So, 'x' is Hydrogen, which burns with pop sound.

and 'y' is chlorine, which is useful for disinfecting water.

P.T.O.

परीक्षक द्वारा
प्रदत्त अंकप्रश्न
संख्या

परीक्षार्थी उत्तर

23

Power of lens :- The ability to converge or diverge a ray by a lens is called its power.

power of a lens is inversely equal to focal length.

power $\Rightarrow +2.0 \text{ D}$

$$\text{By } \Rightarrow P = \frac{1}{f}$$

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

$$\Rightarrow \frac{1}{2.0} \Rightarrow 0.5 \text{ m}$$

$$\text{or } +50 \text{ cm}$$

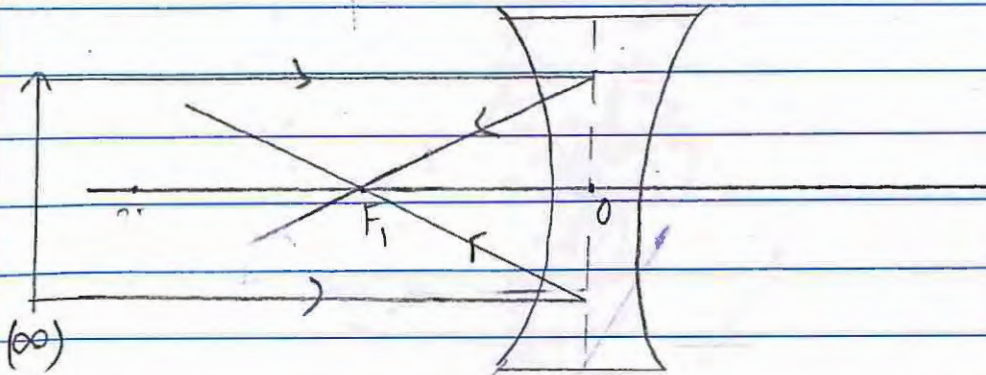
The lens is 'conver', because focal length is positive (+).



परीक्षक द्वारा
प्रदत्त अंक

प्रश्न
संख्या

परीक्षार्थी उत्तर



Object distance $\Rightarrow$ infinity

Image distance $\Rightarrow$ at F_1

Size $\Rightarrow$ is highly diminished

Nature $\Rightarrow$ virtual and erect.

$\Rightarrow$ Refraction by a concave lens.

END

