

केन्द्रीय माध्यमिक शिला बोर्ड, विक्री

सेकंडरी स्कूल परीक्षा (कक्षा दसवीं)
परीक्षार्थी प्रबोध - पत्र के अनुसार भरें

क्रम संख्या Serial No.:

74

CENTRAL BOARD OF SECONDARY EDUCATION, DELHI

Secondary School Examination (Class X)

To be filled in by the Candidate as per Admit Card

लिखें तथा सापंत गोले को पूरे गर्दो नियमानुसार से लिखें।

Write and darken the appropriate circle as applicable

विषय Subject : **Science**.....

विषय कोड Subject Code : **086**.....

फैसला का तिन एवं तिर्यक

Day & Date of the Examination : **Saturday, 06/12/25**

उत्तर देने का माध्यम

Medium of answering the Paper : **English**.....

प्रश्न पत्र के उत्तर लिखें

कोड को लिखें:

Code Number	1
Set Number	(2) (3) (4)

प्रश्न पत्र के उत्तर लिखें

कोड को लिखें:

Write code No. as written on the top of the question paper

अंतिमिक उत्तर - पुस्तक (ओ) की संख्या

No. of supplementary answer-book(s) used

विकलांग चालिक : हाँ / नहीं

Person with Benchmark Disabilities : Yes / No

विकलांगता का कोड (प्रदेश चल के अनुसार)

Code of Disability (as per the Admit card) :

यहाँ लेखें - लिखिक उपलब्ध करनावाया गया: हाँ / नहीं

Whether writer provided : Yes / No

यहाँ द्विजित्त हैं तो उपरान्त में लाइ यहाँ

सार्वजनिक द्वारा दिया गया

If Visually challenged, name of software used :

* एक खाने में एक अक्षर लिखें। नाम के प्रत्येक भाग के बीच एक खाना रिक्त छोड़ दें। यदि परीक्षार्थी का नाम 22 अक्षरों से अधिक है, तो केवल नाम के प्रथम 22 अक्षर ही लिखें।

Each letter be written in one box and one box be left blank between each part of the name. In case Candidate's Name exceeds 22 letters, write first 22 letters only.

विषय Subject :

Science

School No. as per admit card :

विभाग संख्या जूसा रुपये में लिखा जाता है।

Thousands

Cr.

Lakhs

Roll No. :

Father's/Guardian's Name :

Mrs. Omprakash Verma

Please do not write beyond this line

P.S. / संस्करण का नाम

परीक्षार्थी के हस्ताक्षर Signature of Candidate :

इस पृष्ठ पर परीक्षार्थी द्वारा भरे गए विवरण की जांच कर ली गई है।

All the particulars filled in by the candidate on this page have been verified.

कार्यालय उपयोग के लिए

Space for Office use

सहायक समाप्ति के हस्ताक्षर

अधिकारी की ओर

Signature of Asstt. Suptt.

Fusimile stamp of the Centre Suptt.

केन्द्रीय माध्यमिक शिक्षा बोर्ड, दिल्ली

Central Board Secondary Education, Delhi

SECONDARY SCHOOL EXAMINATION(CLASS X)

सैकड़गी स्कूल परीक्षा (कक्षा दसवीं)

Ch + 22
B = 29 ½

Q.No.	01	02	03	04	05	06	07	08	09	10	TOTAL
MARKS											
Q.No.	11	12	13	14	15	16	17	18	19	20	TOTAL
MARKS											
Q.No.	21	22	23	24	25	26	27	28	29	30	TOTAL
MARKS											
Q.No.	31	32	33	34	35	36	37	38	39	40	TOTAL
MARKS											

TOTAL MARKS IN WORDS

मैं प्राप्तिप्राप्त करता/करती हूँ कि मैंने इस जरूर पुस्तका का मूलांकन प्रस्तुत करके अनुसार किया है और जरूर पुस्तक का अनुसार किया है।

अनुसार कार्य दूर किया है।

I certify that I have evaluated this answer book according to the correct set of question paper; strictly as per marking scheme and no question has been left un-assessed inside the answer book. Also, marks have been correctly posted. I have completed the answer book as per instructions.

परीक्षक-1 के हस्ताक्षर (Signature of Examiner - 1)

संख्या No.

मैं प्राप्तिप्राप्त करता/करती हूँ कि मैंने इस जरूर पुस्तका का मूलांकन की गुणता की जांच की ओर यह अंकन यानि मैंने इस जरूर पुस्तका का मूलांकन की गुणता का प्रता लागान के लिए की है। मूलांकन जारीयांकन नहीं है। इस जरूर पुस्तका का कार्ड भी पाठ विद्या मूलांकन के नहीं है, उसकी जांच प्रस्तुत करके याथ एवं पुरी तरह मैं अक्षयों के नहीं है।

I certify that I have checked the quality of evaluation of this answer book and it is according to the instructions and value points detailed in the Marking Scheme (s)

अधिकारिक मुख्य परीक्षक (मूलांकन) के हस्ताक्षर

संख्या No.

मैं प्राप्तिप्राप्त करता/करती हूँ कि मैंने इस जरूर पुस्तका की जांच की है और पाठ विद्या मूलांकन वाला कार्ड भाग नहीं है, इस जरूर पुस्तका की आवश्यक पृष्ठ पर परीक्षण व सभी में योग मही है लिक पर सही अंक अंकांतर सही है।

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I certify that I have checked this answer book and found that it does not have any unevaluated part, totalling inside is correct. Posting of marks on the cover page is correct, totaling on cover page in row and column of the answer book is correct. Correct marks have been uploaded on the link. I also certify that there is no scrutiny mistake in this answer book now.

समन्वयक के हस्ताक्षर Sign of Coordinator

संख्या No.

मैं प्राप्तिप्राप्त करता/करती हूँ कि मैं इस जरूर पुस्तका की जांच की है और पाठ विद्या मूलांकन वाला कार्ड भाग नहीं है, इस जरूर पुस्तका की आवश्यक पृष्ठ पर परीक्षण व सभी में योग मही है लिक पर सही अंक अंकांतर सही है।

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I certify and I have checked this answer book which has been checked by [put (✓) in relevant column] and found that (i) It has been evaluated as per instructions and (ii) Scrutiny has been done correctly and thereafter correct marks have been uploaded.

परीक्षक, Examiner

समन्वयक, Coordinator

अधिकारिक मुख्य परीक्षक (मूलांकन) AHE (Evaluation)

अधिकारिक मुख्य परीक्षक (मूलांकन) AHE (Coordinator)

मूल फॉरम के हस्ताक्षर Signature of HE

संख्या No.

GRAND TOTAL

73 ½

774

मैं प्राप्तिप्राप्त करता/करती हूँ कि मैंने इस जरूर पुस्तका की जांच की गयी प्राप्तांकन संघर्ष (एचई) के अनुसार किया गया है और यह अंक अंकांतर किया गया है।

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I certify and I have checked this answer book which has been checked by [put (✓) in relevant column] and found that (i) It has been evaluated as per instructions and correct marks have been uploaded.

परीक्षक, Examiner

समन्वयक, Coordinator

अधिकारिक मुख्य परीक्षक (मूलांकन) AHE (Evaluation)

अधिकारिक मुख्य परीक्षक (मूलांकन) AHE (Coordinator)

मूल फॉरम के हस्ताक्षर Signature of HE

संख्या No.

SECTION-A // Biology

MCQs:-

- 1> C ✓
- 2> B ✓
- 3> B ✓
- 4> D ✓
- 5> C ✓
- 6> B ✓
- 7> B =
- 8> B)
- 9> D) ✓

Very Short Answer Question

2

- 10> Herbivorous animals eats grass which contains cellulose which is difficult to digest than meat. Therefore for the convenient digestion of cellulose small intestine of Herbivorous animals are longer.

11) For a complex multicellular organism diffusion is insufficient to supply oxygen to all body cells as all cells are not in direct contact with atmosphere. Respiratory system helps such organisms to match their oxygen demand. 2

12) Sex of humans offspring are genetically determined by the chromosome of male sperm cell.

→ If sperm cell has 'X' chromosome and it fuses with egg (X) then the zygote formed has a pair (XX) chromosome which develops into a girl child whereas if sperm cell has 'Y' chromosome and its fuses with female egg (X) then the zygote formed will have (XY) chromosome which will develop to a male child. 2

Short Answer Questions

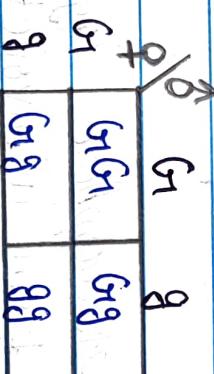
13) Ozone layer present in the stratosphere layer of our atmosphere shield the surface of earth from ultraviolet radiation. It prevents organisms from ~~these~~ harmful rays which can cause several diseases. 3

Steps taken to limit the ozone layer depletion are:-

- (i) Stop the usage of harmful substances in refrigerators like CFC's [Chloro Fluoro Carbon].
- (ii) Treat / clean the harmful gases released by industries like chlorine gas ^{which depletes} ozone layer.

- Q) Yes, a recessive trait can be observed in the offspring if the genes of both the parents are Heterozygous allele.
- Parent :-
-
- $\text{Gg} \times \text{Gg}$
- $\begin{array}{c} \text{Gg} \\ \times \\ \text{Gg} \end{array}$
- $\begin{array}{c} \text{Gg} \\ \text{gg} \\ \text{Gg} \\ \text{gg} \end{array}$
- $\left\{ \begin{array}{l} \text{G} \Rightarrow \text{Dominant Trait} \\ \text{g} \Rightarrow \text{recessive Trait} \end{array} \right.$
- Gamete Formation

Q) Gamete Fusion :-



Genotypic Ratio :- $\text{Gg} : \text{gg} = 1 : 1$

$$\Rightarrow 1 : 2 : 1$$

Recessive Trait \Rightarrow would show recessive character.

Case Based Question Answers

15)

A) Our Body contains a large amount of water from which some part is mandatory to be removed to provide a better flow and easy way to remove metabolic wastes from the body.

C)

Bowmen's Capsule

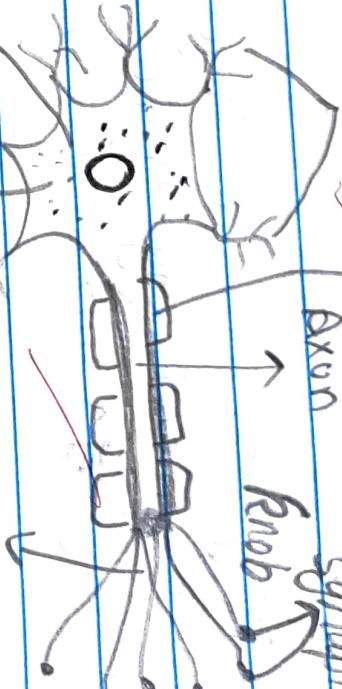
① The amount of metabolic waste like Urea, uric acid and nitrogenous waste decided the amount of water to be absorbed by the filtrate.

long

Long Answer Questions

Dendrites \rightarrow myelinated sheets

(vi) B) Neuron is the largest cell of human body. It is a functional unit of our nervous system.



- It consists of :-
- (i) Dendrites :- Receives information and send to cell body.
- (ii) Cell body :- It receives chemical signal and converts it to electrical impulse which further moves to axon.
- (iii) Axon :- It is the path of electrical impulse received from cell body towards nerve ending.
- (iv) Nerve Ending :- They contains synaptic knobs which further conveys signal to next neuron.
- (v) Synaptic knobs :- Secretes neurotransmitters in synapse to transmit signal to next neuron.

SECTION-B [Chemistry]



17) A T

18) B F

19) C P

20) D T

21) D ①

22) C T

23) A T

24) A T

Ques / Answer

25) Initially, POP (Plaster of Paris) [$\text{CaSO}_4 \cdot \frac{1}{2} \text{H}_2\text{O}$] are mixed with water to bandage the fractured bone. After mixing with water and after some time it converts from a powdered to a hard solid substance [Gypsum \rightarrow $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$]

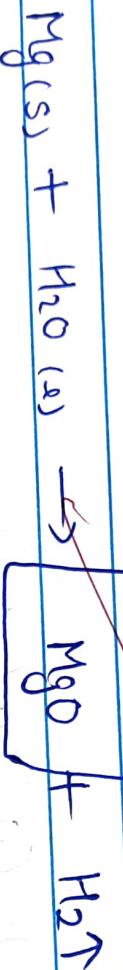


10

Sodium Potassium
↑
Na & K

26)

- i) Metals which react vigorously with cold water are Na^+ & K^+
 ii) Metals which react less violent with Hot water are Ca^{2+} & Mg^{2+}
 Metals which react less violent with Hot water are Ca^{2+} & Mg^{2+}



Starts floating.

27)

Carbon is a non-metal with atomic number 6 and valency 4.

- It has 4 valence electrons therefore, it is said as Tetra valency atom.

→ It can neither gain nor lose all $4e^-$ because they will

led in the formation of a highly unstable compound.

(ii) It shows He^- and forms covalent bonds.

(iii) It also performs catenation.

(iv) Since carbon has a tetravalency and exhibits catenation, therefore it forms a large no. of compounds.

28)

i) Substance E can be used as a preservative.

1

ii) Substance B can be used as a antacid.

1

iii) Substance C is a very strong acid as its pH value is zero due to the maximum H^+ ions concentration.

2

29)

A) 'Al' get oxidised if it is dipped in HNO_3 and converts to Aluminium oxide which is less reactive than Aluminium itself.



B) Carbon is less reactive than Sodium and Magnesium therefore it cannot reduce them from their oxides.

12

c)

NaCl is a ionic compound and they lack free electron in their solid form but they dissociate into ions in their aqueous or molten state and conducts electricity.

d)

To prevent the Rusting of Iron, Iron metal surface is painted with a layer of zinc (Galvanisation). Zinc gets oxidised and forms a protective layer, which protects iron from corrosion.

e)

Metals like Na, K, Ca and Mg are highly reactive metals as they react with oxygen present in the surrounding and gets converts to their oxides (more stable form).

SECTION-C [Physics]

MCQs:-

3y

3y

3y

3y

3y

3y

3y

3y

3y

①

3y

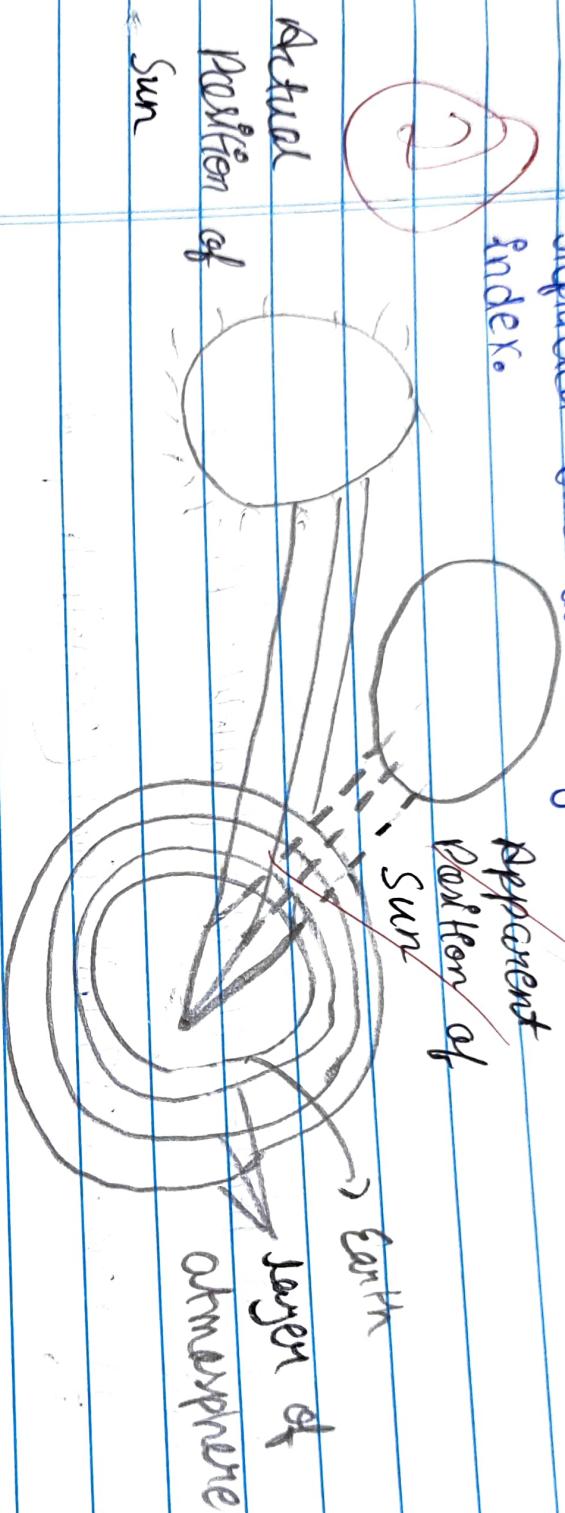
3y) Size of the mirror is formed as Aperture.

Aperture

ii) The point on principal axis on which reflected rays meets or appears to meet is called Principal focus.

14

- 35) This is due to the atmospheric refraction. Sun rays get refracted due to change in medium of light (or) refractive index.



- 36) a) Resistance of a wire when Volt of potential difference is applied across the conductor and Ampere of current is flowing through it.

$$V = IR$$

$$I = I(R)$$

$$R = 1 \Omega$$

$$\frac{R}{n} = \frac{U}{n} \Rightarrow \frac{176}{n} = \frac{44}{n}$$

B)

$$I = 5A$$

$$V = 220V$$

$$R_e = ?$$

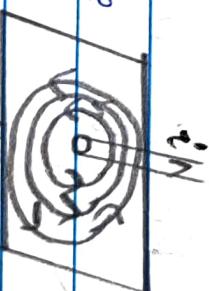
$$V = IR \quad \text{Ohm's Law}$$

$$\Rightarrow \frac{V}{I} = \frac{220}{5} = \boxed{44 \Omega = R_e}$$

$R_e = \frac{R}{n}$ (Parallel Combination)

$$44 = \frac{176}{n} \Rightarrow n = \frac{176}{44} \Rightarrow \boxed{n=4}$$

o o Resistance of 176Ω should be connected in parallel for above situation.



- 37) (i) Take a Card board and pass a straight wire through it.
- (ii) Pass the electricity through the wire
- (iii) Sprinkle some powdered iron on the wire when the current is passing through the conductor.

(iii) Hardened iron get rearranged in the patterns of magnetic field lines which proves that a current carrying wire passes magnetic effect.

38)

$$\text{A}_1 \rightarrow 1\text{A}$$

~~$$R_p = \left(\frac{1}{3} + \frac{1}{3} \right) + \left(\frac{1}{3} + \frac{1}{3} + \frac{1}{3} \right) + \left(\frac{1}{3} + \frac{1}{3} + \frac{1}{3} \right)$$~~

~~$$\frac{1}{R_p} = \frac{1}{3} + \frac{1}{3} + \frac{1}{3}$$~~

~~$$R_p = \frac{3 + 1 + \frac{3}{2}}{2} \Rightarrow R_p = \frac{6 + 4 + 3}{6} \Rightarrow \frac{13}{6} \Omega$$~~

~~$$R_p = \frac{13}{6} \Omega$$~~

From A₁,

~~$$I_1 = 1\text{A}$$~~

~~$$V = V$$~~

~~$$I_1 = \frac{V}{R}$$~~

$$\Rightarrow \text{From } \text{A}_2 \Rightarrow I = \frac{V}{R} \Rightarrow V \Rightarrow \frac{13}{6} = I_2$$

38)

A) 1st case) $A_1 = 1A = I$

$$\frac{V}{R} = I = 1$$

$$V = R$$

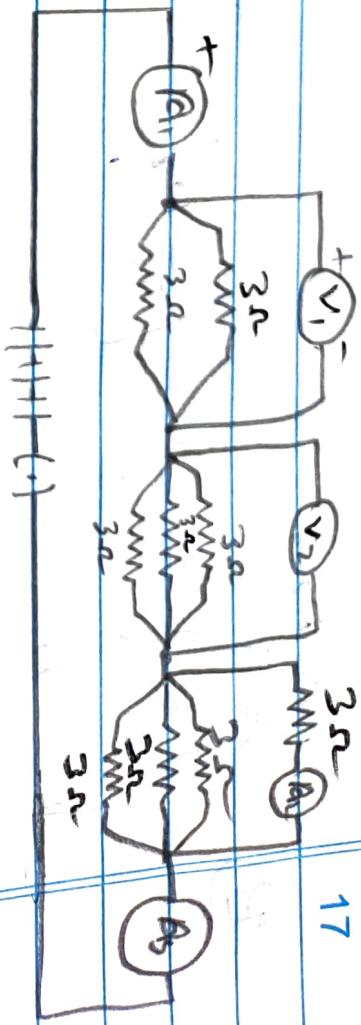
$$\frac{1}{R_e} = \frac{n_1}{R} + \frac{n_2}{R} + \frac{n_3}{R_3} = \frac{2}{3} + \frac{3}{3} + \frac{4}{3} = \frac{9}{3} = \frac{1}{R_e}$$

$$R = V = \frac{1}{R_e}$$

$$V = IR = \frac{1}{3} \times 3 = 1V$$

$$I = I \left(\frac{1}{3} \right) \Rightarrow I = 3A \Rightarrow \text{Reading of } A_2$$

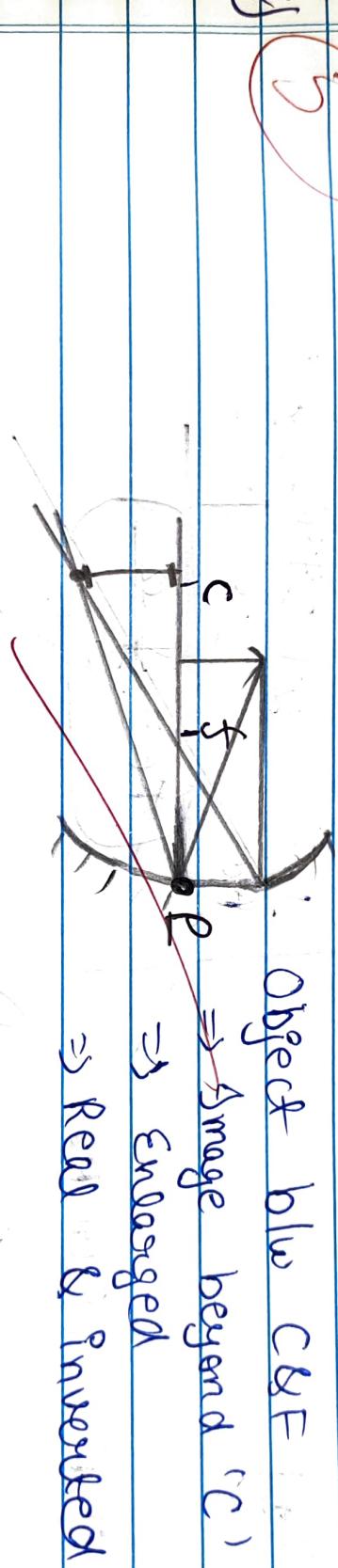
$$A_2 = 3(A_1)$$



30) a) Concave mirror

b) $m = -\frac{v}{u} = -\frac{(60)}{15} \Rightarrow m = -4$

c) $v = -60 - -15 \Rightarrow -60 + 15 \Rightarrow 45 \text{ cm}$



\Rightarrow Enlarged
 \Rightarrow Real & inverted

36)

Since all the resistance are connected in series
and current remains same in series,
 $\therefore A_1 = A_3 = I$

$$V = IR \quad (\text{For } A_2)$$

$$Re = \left(\frac{1}{3} + \frac{1}{3} \right) + \left(3 \left(\frac{1}{3} \right) \right) + 4 \left(\frac{1}{3} \right)$$

$$I = \frac{2+3+4}{3} \Rightarrow \frac{9}{3}$$

$$\Rightarrow \boxed{\frac{V}{3} = I_2}$$

$$V = IR \quad (\text{For } A_3)$$

$$Re = \frac{1}{3} \Omega$$

$$\Rightarrow V = I = 1 \quad \boxed{3V = 3}$$

$$\frac{1}{3}$$

$$I_1 = I_2 = 3V = \frac{V}{3} \Rightarrow 9V = V$$

$$\boxed{9(A_3) = A_2}$$

Q)

$$I = 1A$$

$$R = 1\Omega$$

$$V_2 = V = IR = 1(1) = 1V$$