2009

माध्यमिक शिक्षा मण्डल, मध्यप्रदेश, भोपाल

मु.उ.पु. 24 पृष्ठ

कार्यालयीन उपयोग के लिए

निम्न रिक्तियों की सही प्रविष्टि परीक्षार्थी द्वारा की जाए।

परीक्षा के नाम की सील

1. विषय कोड 2 1 0 परीक्षा का विषय PHYSICS

2. परीक्षा का माध्यम ENGLISH परीक्षा की दिनांक 02-03-2009

केन्द्र क्रमांक की सील

केन्द्र क्र. 541001

3. परीक्षार्थी प्रश्न पत्र का पूर्ण कोड नम्बर — कोड U-2945 सेट C

उत्तर पुस्तिका का सरल क्रमांक K 5988483

4. परीक्षार्थी का अनुक्रमांक (अंग्रेजी अंकों में)

2	9	5	4	1	5	4	5	2

5. नीचे दिये प्रत्येक कालम में ऊपर दिये गये अनुक्रमांक के अंकों को उसी क्रम में शब्दों में लिखा जाए :-

पर्यवेक्षक/केन्द्राध्यक्ष का प्रमाणीकरण

प्रमाणित किया जाता है कि परीक्षार्थी द्वारा निम्नानुसार पूरक उत्तरपुस्तिका ली गई है :-

क :- संख्या शब्दों में 3 अंकों में Three

ख :- परीक्षार्थी की बैठक व्यवस्था कक्ष क्रमांक 12 में है।

ग :- उत्तर पुस्तिका पर प्रश्न-पत्र का कोड नम्बर एवं सेट सही लिखा है।

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हस्ताक्षर (पर्यवेक्षक)

नाम Swati Desai पद U.D.T.

पता/संस्था DAVS 502 Bhopal

परीक्षार्थी द्वारा ली गई सभी पूरक उत्तर पुस्तिकायें, मुख्य उत्तर पुस्तिका के साथ संलग्न हैं।

हस्ताक्षर केन्द्राध्यक्ष

परीक्षार्थी, परीक्षक से अपेक्षा है कि वे पृष्ठ भाग पर दिये गये निर्देशों का यथेष्ट पालन सुनिश्चित करेंगे।

प्र	5
3	
4	
5	
6	
7	
8	
9	
10	
कु	
प्रा	7

प्रमाणित किया जाता है कि उपरोक्तानुसार संलग्न पूरक उत्तर पुस्तिकाओं की संख्या मूल्यांकन के समय सही पाई गई है। होलोक्राफ्ट स्टीकर चस्पा स्थिति में यथावत् रखते हुए ही उत्तरपुस्तिका का मूल्यांकन किया गया है। मैंने सभी प्रश्नों के उत्तरों का गहन मूल्यांकन किया है। उत्तर पुस्तिका के अन्दर के अंक एवं कव्हर पृष्ठ पर दर्शाये अंक एक समान है एवं योग पूर्णतः सही है।

हस्ताक्षर (परीक्षक) 4/3/09

परीक्षक क्रमांक 4/638

हस्ताक्षर (उपमुख्य परीक्षक)

दिनांक.....

हस्ताक्षर (मुख्य परीक्षक)

दिनांक.....

परीक्षार्थी के लिए निर्देश

1. परीक्षार्थी को अपना अनुक्रमांक/विषय/माध्यम/दिनांक एवं प्रश्न–पत्र का कोड (समूह) मुख पृष्ठ पर अंकित करना अनिवार्य है। अन्यत्र कहीं भी नहीं लिखा जाएगा।
2. अनुक्रमांक नीचे दिये गए उदाहरण अनुसार लिखा जाए :–

1	8	2	4	3	9	5	6	8
एक	आठ	दो	चार	तीन	नौ	पाँच	छः	आठ

3. उत्तर पुस्तिका के दोनों ओर पृष्ठों में लिखें। बीच में रिक्त स्थान न छोड़ें। भूल से छूटा/रिक्त स्थान तथा शेष खाली पृष्ठों को क्रास किया जाए।
4. परीक्षार्थी प्रश्न पत्र हल करते समय ही, कव्हर पृष्ठ पर दी गई तालिका में प्रश्न क्रमांक के सम्मुख वाले कालम में उत्तरपुस्तिका का वह पृष्ठ क्रमांक अनिवार्य रूप से अंकित करें जिस पर प्रश्न का उत्तर लिखा गया है। यदि पूरक उत्तरपुस्तिका का उपयोग किया गया हो, तो उस पर 25 से प्रारंभ करते हुए पृष्ठ क्रमांक परीक्षार्थी द्वारा स्वयं डाले जाएँ।

परीक्षक के लिए निर्देश

1. केवल उन्हीं उत्तरपुस्तिकाओं का मूल्यांकन करें जिन पर होलो क्राफ्ट स्टीकर चस्पा है।
2. उत्तरपुस्तिका का मूल्यांकन होलो क्राफ्ट स्टीकर को चस्पा स्थिति में यथावत् रखते हुए ही किया जाये।
3. बिना होलो क्राफ्ट स्टीकर वाली तथा फटे हुए होलो क्राफ्ट स्टीकर वाली सभी उत्तरपुस्तिकाऐं मूल्यांकन हेतु परीक्षा नियंत्रक, माध्यमिक शिक्षा मण्डल, मध्यप्रदेश, भोपाल को व्यक्तिशः रूप से भेजी जाये।

मूल्यांकन केन्द्र के लिए निर्देश

1. **O.M.R. SHEET** पर प्राप्तांक की प्रविष्टि करने हेतु केवल वही उत्तरपुस्तिकाएँ प्राप्त करें, जिनका मूल्यांकन होलो क्राफ्ट स्टीकर को चस्पा स्थिति में यथावत् रखते हुए ही किया गया है। यदि होलो क्राफ्ट स्टीकर फटा हुआ पाया जाता है तो ऐसी उत्तरपुस्तिकाऐं मूल्यांकन केन्द्र अधिकारी को पृथक से सौपी जाएँ। ऐसे प्रकरणों के प्राप्तांकों की प्रविष्टि **O.M.R. SHEET** में नहीं की जाए। मूल्यांकन केन्द्र अधिकारी ऐसी उत्तरपुस्तिकाऐं पुनः मूल्यांकन के लिये परीक्षा नियंत्रक, माध्यमिक शिक्षा मण्डल, मध्यप्रदेश, भोपाल को व्यक्तिशः रूप से सौपेंगे।
2. उत्तरपुस्तिका के मुख्य पृष्ठ में अंकों एवं शब्दों में अंकित प्राप्तांकों को मिलान कर **O.M.R. SHEET** में अंकों की सटीक प्रविष्टि करें।
3. **O.M.R. SHEET** पर प्रमाणीकरण कर हस्ताक्षर करें।

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Section - A
(Objective Type Questions)

Q. 1

1 (अ)

ans → (ii) 6.25×10^{18}

2. (ब)

ans → (iv) Electric Current

3 (स)

ans → (ii) Oersted

(i)

ns → (ii) Ultra high frequency radio waves

(ii)

ns → (ii) $\beta = \frac{\alpha}{1-\alpha}$

पृष्ठ के अंकों का योग

(P.T.O)

Q. No. 2

(a)

Ans → NC^{-1} (Newton per Coulomb)

(b)

Ans → Specific Conductance

(c)

Ans →

(d)

Ans → Inverter

(e)

Ans → Analog Signal

Answers Continued

Q.3

Ans →

A — Answer of 'A'

(a) Electric dipole moment — Coulomb X Metre
(b) Lorenty force — $qvB \sin\theta$
(c) S.I. unit of Self-induction — Henry
(d) Biot-Savart Law — $dB = \frac{\mu_0 I\, dl \sin\theta}{r^2}$
(e) Base of electromagnetic waves — Hertz

Q.No.- 4

(a)
Ans → True

(b)
Ans → False

)
ns → False

i)
Ans → False

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(e)

Ans → Torque

Section - B

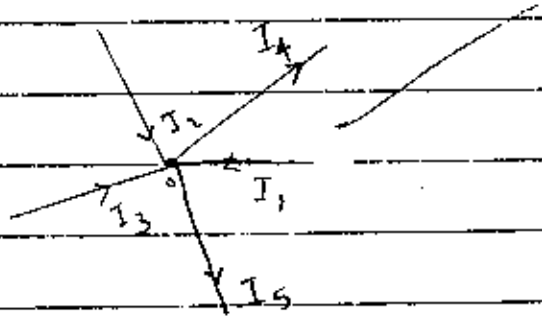
Very short answer Type Questions:

Q.No. 5 (Answer)

Ans 5 → Kirchhoff's Laws :-

First Law :- According to Kirchhoff's first law the sum of all the currents comming or passing through a charge is zero

$$\Sigma I = 0$$



From the above diagram, we see that current I_1, I_2, I_3 are comming towards the point O and the currents I_4 and I_5 are going away from the point O. Therefore according to Kirchhoff's law,

$$\Sigma I = 0$$

$$\therefore I_1 + I_2 + I_3 + I_4 + I_5 = 0$$

$$I_1 + I_2 + I_3 = -(I_4 + I_5)$$

Hence Kirchhoff's first law is

$$\Sigma I = 0$$

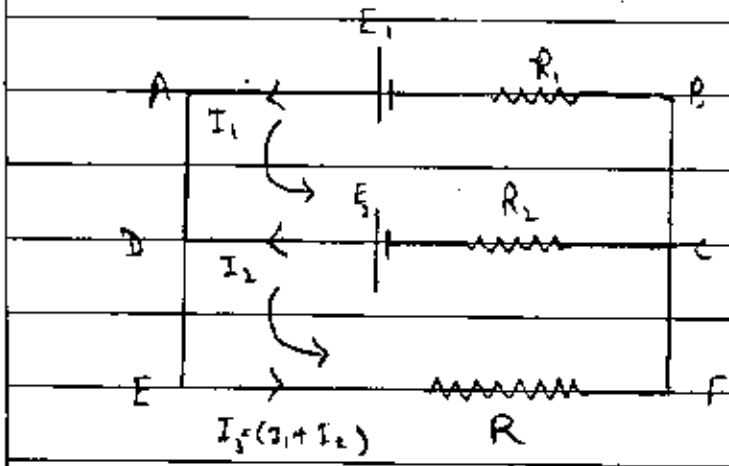
Second law :- According to Kirchhoff's second law, the sum of all the e.m.f (electromotive forces) is equal to the sum of product of all the currents and resistances in a circuit.

$$\Sigma E = \Sigma IR$$

or

$$\Sigma IR = \Sigma E$$

This law can be explained by ;



From the above circuit diagram, we see that E_1 and E_2 are the electromotive force (e.m.f.) of the two cells and R_1 and R_2 be their corresponding resistances. The current flowing in from E_1 be I_1, E_2 be I_2 and I_3 be the total current flowing through the circuit and the resistance R.

In circuit ABCD,

$$-I_1R_1 + I_2R_2 = -E_1 + E_2$$

In circuit ABEF

$$-I_1R_1 + (I_1+I_2)R = -E_1 + E$$

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Answer No. 6

Ans→ The difference between Ammeter and Voltmeter are as follows:-

S.No	Ammeter	Voltmeter
(i)	Ammeter is used to measure the current flowing in a circuit	Voltmeter is used to measure the potential difference of a circuit
(ii)	Ammeter is always Connected in Series	Voltmeter is always Connected in in parallel
	Ammeter can be Constructed by Connecting a Shunt (low resistance) in parallel to a galvanometer	Voltmeter can be Constructed by Connecting a high resistance in series to a galvanometer
	Its Scale is graduated in ampere.	Its scale is graduated in volt

S. No.	Ammeter	Voltmeter
(v)	The resistance of an ideal ammeter is zero	The resistance of an ideal voltmeter is infinite
(vi)	In any ordinary ammeter, the resistance can never be zero but it is negligible.	In any ordinary voltmeter, the resistance can never be infinite but it somewhat very high
(vii)	The range of ammeter can be increased but it can not be decreased	The range of voltmeter can be increased as well as decreased.
(viii)	The resistance of an ammeter of low range is more as compared to hight range ammeter	The resistance of low range voltmeter is less as compared to high range voltmeter.

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पृष्ठ के अंकों का योग

Answer No. 7

Ans → The difference between a Step-up transformer and a Step-down transformer are as follows :—

S.No	Step-Up Transformer	Step-down Transformer
(i)	This transformer is used to Convert low a.c. voltage to a high a.c. voltage (Alternating current)	This transformer Convert high a.c. voltage to low a.c. voltage
(ii)	The Strength of current decreases in this type of transformer	The Strength of current increases in this type of transformer
(iii)	The number of turns in its primary coil are less than the number of turns in secondary coil.	The number of turns in its primary coil are more than the number of turns in its secondary coil.

S.No	Step-up Transformer	Step-down Transformer
(iv)	The primary coil of this type of transformer is thicker than its secondary coil.	The primary coil of this type of transformer is thinner than its secondary coil.
(v)	It is used in large electric power stations	It is used in common electric appliances like, fan, radio etc.

Answer No. 8

Ans (g) → **Ozone layer :—** Ozone layer is the layer which is situated 30 Km above the earth's surface. Ozone layer is the component of the ozonosphere which extends 30–50 Km above the surface of earth. This layer consist of ozone (O_3). This layer extends from 30–50 Km above the surface of earth.

Necessity of Ozone layer to the existence of big life on earth :—

The Ozone layer is very vital and necessary for the existance of life on earth because this layer has the property to absorb the harmful ultra-violet rays Comming from the Sun.

The ultra-violet rays comming from the Sun are very harmful. These rays are harmful for plants as well as every living being on this earth.

If these rays comes to the earth, they can cause Skin Cancer and destroy the helpful and good bacteria along with harmful bacteria. So it is very necessary that these rays should be stopped comming to the earth and Ozone layer is stopping these rays. So Ozone layer is very important and vital for

the Sustainence of life on the earth. So we should try to protect Ozone layer because it is important for us only.

It is harmed nowadays by pollution created by man. Its density is decreasing. So we should try to minimize pollution and protect it because it protect us.

Answer No. - 9

Ans-9 → Given →

focal length of Concave mirror = $f = 24$ (m (negative)

Position of object from the mirror = $u = 48$ (m (negative)

Position of image from the mirror = $v = ?$

We Know that for a concave mirror

$$\frac{1}{f} = \frac{1}{v} + \frac{1}{u}$$

Putting $\Rightarrow \frac{1}{v} = \frac{1}{f} - \frac{1}{u}$

Putting the values of f and u in above formula we have,

$$\frac{1}{v} = \frac{1}{(-24)} - \frac{1}{(-48)}$$

$$\Rightarrow \frac{1}{v} = -\frac{1}{24} + \frac{1}{48}$$

$$\Rightarrow \frac{1}{v} = \frac{-2+1}{48}$$

$$\Rightarrow \frac{1}{v} = \frac{-1}{48}$$

$$\Rightarrow \boxed{v = -48 \text{ cm}}$$ numerically $\boxed{v = 48\text{cm (negative)}}$

Thus image is formed at a distance 48 cm in front of the mirror.

The image formed is real and

inverted and it is of the same size of the object because it is placed at centre of curvature ($\because 2f = R, \therefore R = 48cm$) and $R = u = 41cm$ (Image when object is placed at centre of curvature the image is formed at the same place but inverted & real.

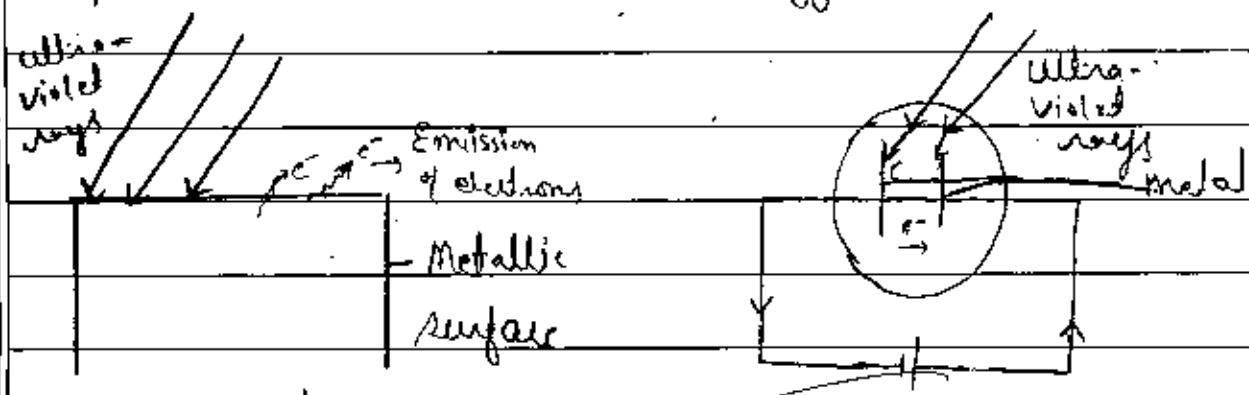
Q. NO. -10 | Answer

Answer - Ia →

Photo - Electric Effect :- Photo-electric effect is the effect caused when ultra-violet rays falls on a metallic surface which results in the emission of electrons from the metallic surface.

These electrons are called photo-electrons and due to the flow of these photo-electrons, a current called photo-electric current flows.

This whole pheomena is called photoelectric ~~emission~~ Effect.



Photoelectric Effect. Photoelectric Effect.

Laws of Photoelectric Effect :-

(i) The process of photoelectric emission is spontaneous. Thus, this whole effect is spontaneous

(ii) This effect arises when the frequency of the ultra-violet rays falling on the metal are greater than a certain minimum frequency which is called threshold frequency or work function (v'0)

(iii) The kinetic energy of emitted electrons depends upon the frequency of incident (ultra-violet) rays

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iv) The number of electrons emitted depends upon the intensity of incident ultra-violet light

(v) The amount of photo-electric current flowing in the circuit depends upon intensity of incident ultra-violet light

Answer No.- 11

Answer 11 :- The differences between amplitude modulation and frequency modulation are as follows :-

S. No.	Amplitude Modulation (AM)	Frequency Modulation (FM)
(i)	The modulation in which the amplitude of modulated wave is the linear function of amplitude of modulating wave, is called Amplitude	The modulation in which the frequency of modulated wave is the linear function of amplitude of modulating wave is called frequency

Sn	Amplitude Modulation	Frequency Modulation.
(ii)	The modulation index of this type of modulation is $Ma = \frac{E_{max} - E_{min}}{E_{max} + E_{min}}$	The modulation index or depth of this type of modulation is $mf = \frac{\Delta f}{fm}$
(iii)	More noise occurs in this type of modulation.	Less noise occurs due to this modulation.
(iv)	This modulation is not used to transmit music signals.	This type of modulation is used to transmit music signals.
(v)	The instruments used in this type are less expensive.	The instruments in this type are more expensive than A.M.
(vi)	Its equipments are less complex than FM.	Its equipments are more complex than A.M.
(vii)	Band width is more	Band width is less.

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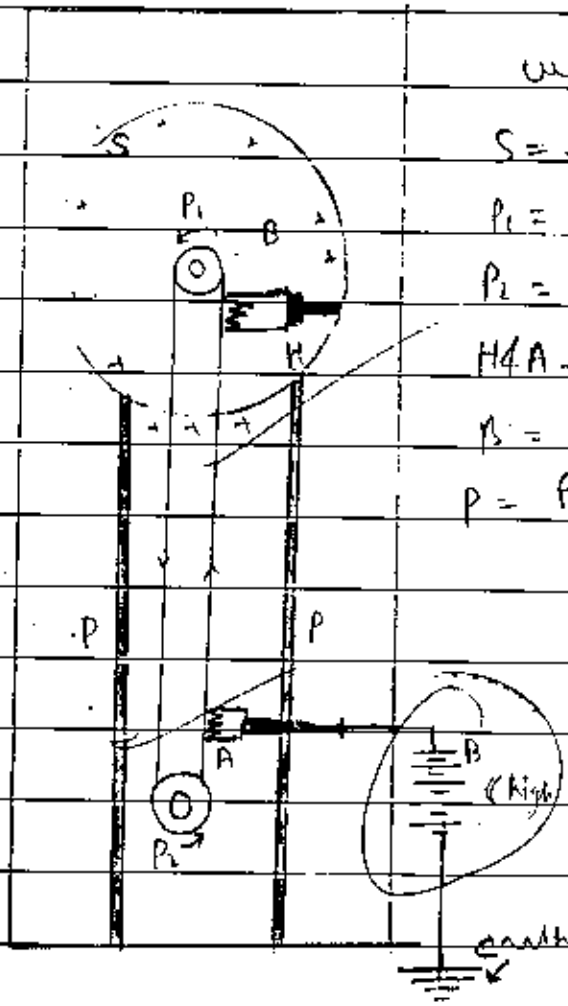
Q.No.-12/ Answer/

Answer 12 → Van de Graff Generator

Van-de Graff generator is used to draw high voltage It was constructed by a scientist Van-de Graff.

Labelled Diagram :-



where,
S = Sphere (hollow)
P1 = Pulley (1)
P2 = Pulley 2
H & A = Brushes (metal)
B = Battery
P = Pillars.

Vande Graff Generator

Principle :- This generator is based on the principle that :

(i) The capacitance of of Spherical charged Conductor is $C = 4\pi\epsilon_0 R$ where R is its radius. If R is increased, the capacity of Conductor is increased. So in this generator a very large Spherical Conductor of large radius is taken so that its capacitance is very much.

(ii) We Know that the intensity of electric field is more at the sharp ends of a Conductor. Thus the metallic Brushes of very sharp ends are used in this Kond Generator.

(iii) If the input potential is very high then the we can get very much higher output potential. So a battery of very ~~large~~ much

potential is used here in this generator.

Uses :- The uses of Van-de-Graff generator are as follows :-

(i) This type of generator is used to draw a high potential.

(ii) This type of generator is used to accelerate charged particles.

(iii) This type of generator is used in nuclear physics.

(iv) This type of generator is used to study the fundamentals and more ahead about physics.

(v) It is used in electric power stations.

Defects of Van-de Graff generator :-

(i) The Components used in Van-de Graff generator are of very large size. To construct such components is difficult.

(ii) The space required by it is very large.

(iii) It is very heavy.

(iv) It is not portable.

(v) It is very diffult to take this Van-de Graff generator to p from one place to another.

(vi) A high voltage to battery is also diffiult to provide.

(vii) The probability of to

(vii) The probability of loss of energy is more.

Q. No. 13 | Answer

Ans. 13 → Compound Microscope

This microscope is used to see very small objects clearly and distinctly.

Construction of Compound Microscope :-

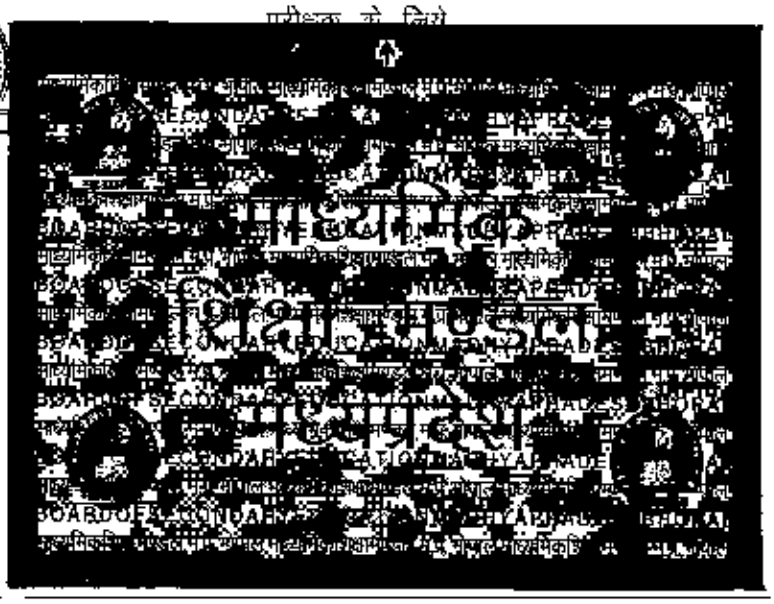
In this microscope two Convex lens are used. The first one is called objective lens (where object is placed below it) and the second one is called eye piece from where image is seen. In diagram below L_o is objective lens whose

पृष्ठ के अंकों का योग

पूरक उ पु 4 पृष्ठ

माध्यमिक शिक्षा मण्डल, मध्यप्रदेश, भोपाल

1. केन्द्र की सील केन्द्राध्यक्ष 5411001
2. पर्यवेक्षक के हस्ताक्षर दिनांक
3. केन्द्राध्यक्ष के हस्ताक्षर की सील
4. केन्द्र क्रमांक
6. परीक्षा का नाम Hr. Sec. Exam.
7. विषय Physics 8. माध्यम English
8. दिनांक 02/03/2009
पृष्ठ 25



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Am 10]

focal length is f_o and there is eye piece whose focal length is f_e.
Here $f_o < f_e$.
When the object (AB) is place beyond the focal length of objective lens then its image A'B' is formed beyond f_o and in (f_e) now this image will work as object for eye piece and its image (inlarged and magnified) A"B" is formed.

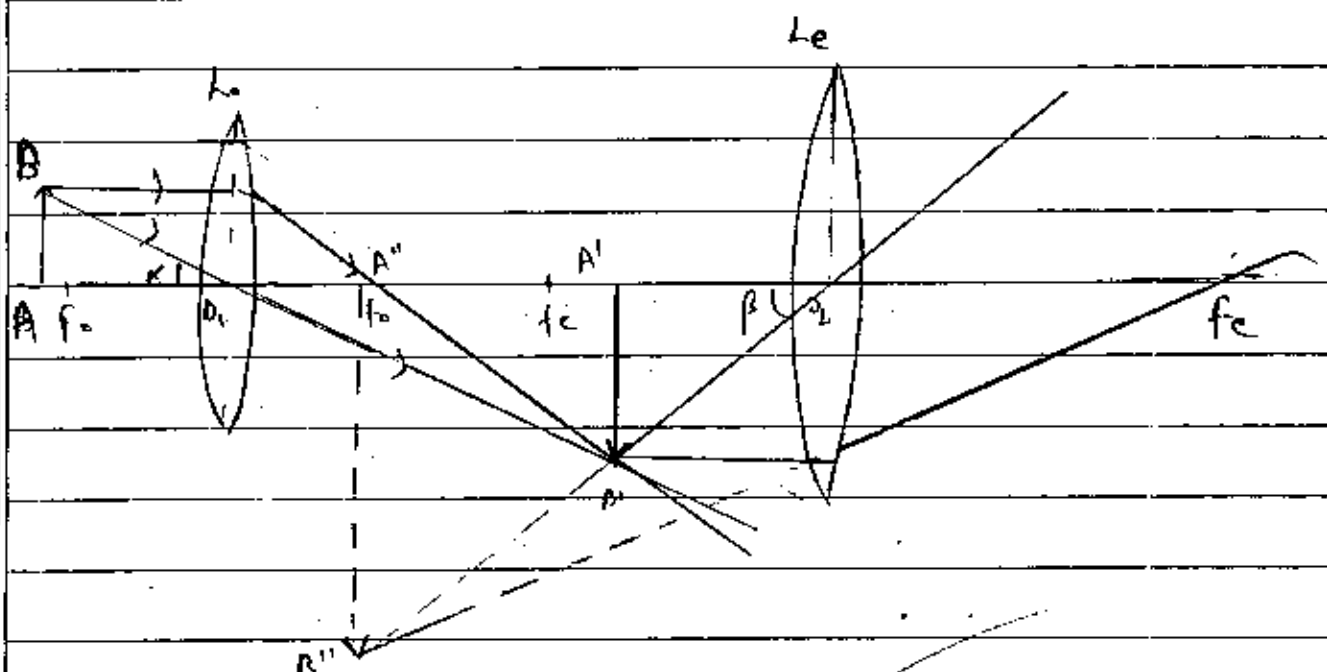
From the diagram below, it is clear that
distance of object (AB) from lens (L_o) $O_1A = U_o$ (-ve)
distance of image (A'B') from lens (L_o) $O_1 = V_o$ (+ve)

(26)

Distance of image (working as object) from lens (L_e) = u_e (-ve)

Distance of final image from lens (L_e) = v_e (-ve)

Least distance of distinct vision = D



Magnification :- We know that

m = Visual angle at eye by image / Visual angle at eye by object

$m = \frac{\beta}{\alpha}$

If α and β are very small

then

$$m = \frac{\tan\beta}{\tan\alpha}$$

In ΔABO_1,

$$\tan\alpha = \frac{AB}{O_1A} = \frac{AB}{D}$$

In $\Delta O_1A''B''$

$$\tan\beta = \frac{A''B''}{O_1A} = \frac{A''B''}{D}$$

$$\therefore m = \frac{A''B''}{AB}$$

$$m = \frac{A''B''}{A'B'} \times \frac{A'B'}{AB} \quad (m_1 \times m_2)$$

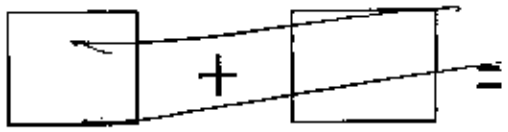
In $\Delta O_2A''B'$ & $\Delta O_2A'B'$ are similar

then

$$\frac{A''B''}{A'B'} = \frac{O_2A''}{O_2A'}$$

& ΔO_1AB and $O_1A'B'$ are similar

then $\frac{A'B'}{AB} = \frac{O_1A'}{O_1A}$



योग पूर्व पृष्ठ पृष्ठ 4 के अंक

(28)

$$\therefore m = \frac{O_2A''}{O_2A'} \times \frac{O_1A'}{O_1A}$$

$$m = \frac{-D}{u_e} \times \frac{v_o}{u_o}$$

(Case I) When image is formed at ∞

f_m

$$\frac{1}{f} = \frac{1}{v} - \frac{1}{u}$$

$$\frac{1}{f_e} = \frac{1}{\infty} - \frac{1}{(-u_e)}$$

$$f_e = u_e$$

$$\therefore m = \frac{-D}{f_e} \times \frac{v_o}{u_o}$$

(Case II) When image is formed at D (least distance of distinct vision)

$$\frac{1}{f_e} = \frac{-1}{D} - \left(\frac{-1}{u_e}\right)$$

$$\frac{1}{f_e} = \frac{1}{D} + \frac{1}{u_e}$$

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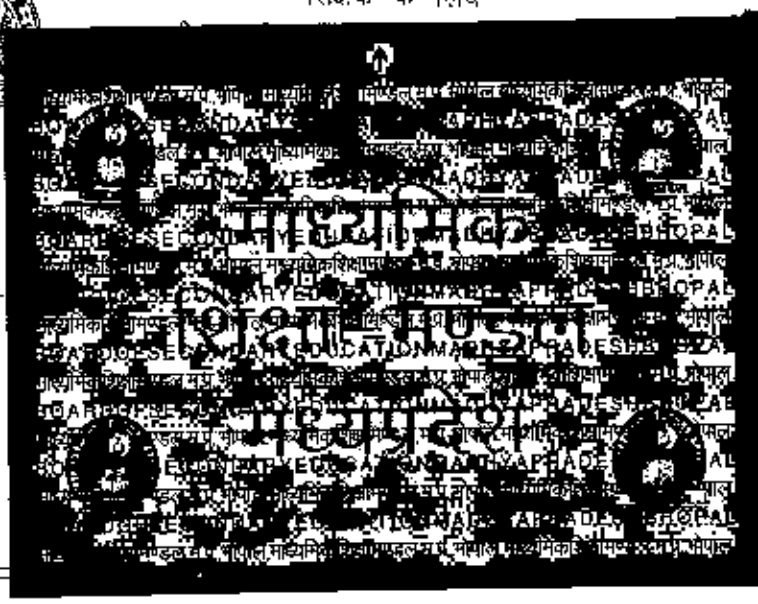
परीक्षक के लिये



पृष्ठ (2-9)

Q.No 13

$$\frac{D}{u_e} = \frac{1+\frac{D}{f_e}}{}$$

$$\therefore \boxed{m_e = \left(1+\frac{D}{f_e}\right)\left(-\frac{v_o}{u_o}\right)}$$

Q.No.14

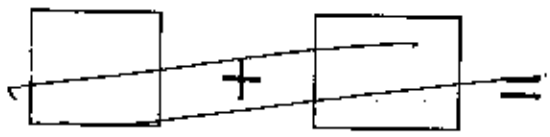
Ans →

P-N Junction Diode as full wave rectifier :

It is used to convert A.C. to into D.C.

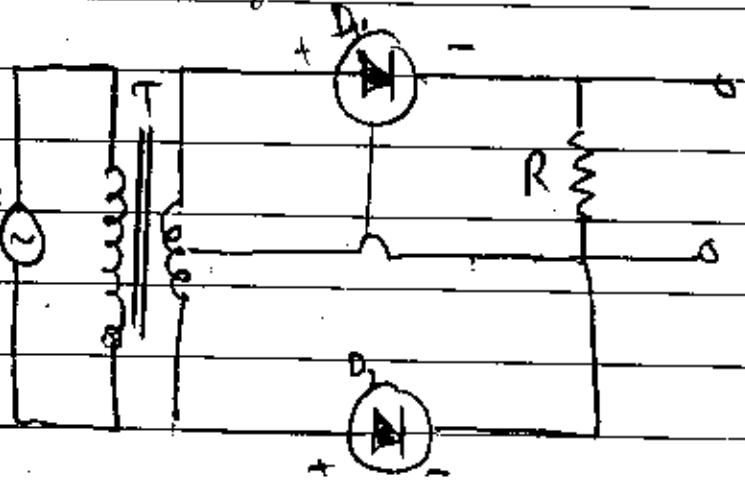
(P.T.O)

BSEMP



योग पूर्व पृष्ठ पृष्ठ 2 के अंक

Labelled diagram



T = Transformer
D1, D2 = Diodes
R = Load resistance

Working :- During the positive half cycle of input a.c. current, the diode D_1 is at forward biasing position and diode D_2 is at reverse biasing position. So current will flow through D_1 and not from D_2 we get output from D_1.

Now in negative half cycle of input a.c. current the diode D_1 is reverse biased and

(31)

diode D_2 is forward biased So current (i_2) will flow in D_2 not in D_1 and we get output from D_2.

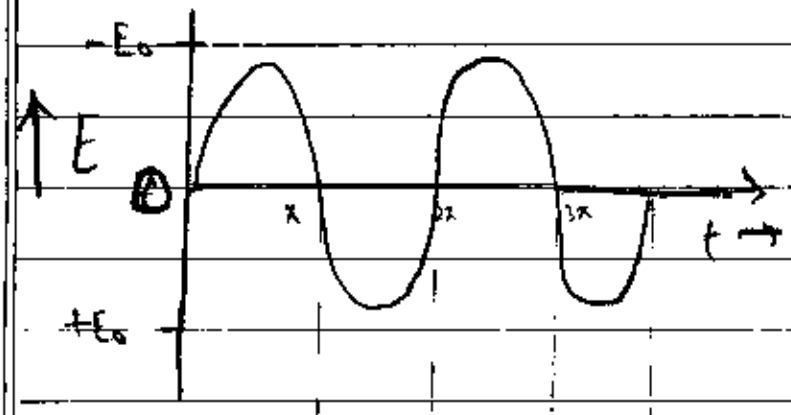
Thus in every cycle of input a.c. current we get some output in load resistance R.

So we get full wave of output current. It is in one direction only.

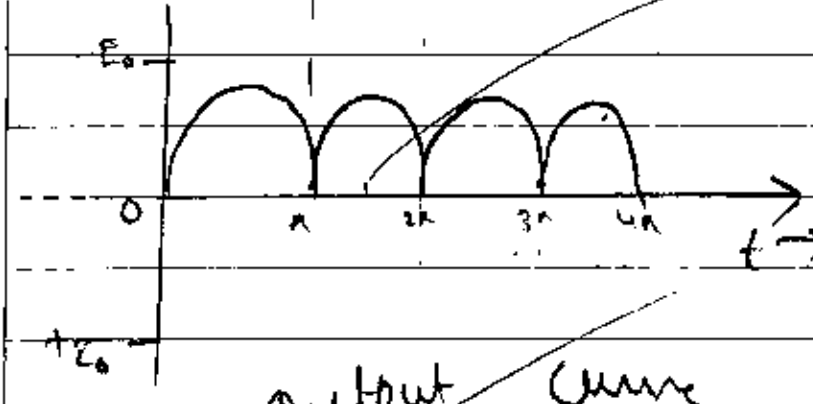
We get full wave direct current from the input potential from this type of rectifier.

Input and Output Potential Curve :-

The input and output potential curves are



input wave



output wave

Full wave Rectifier

Thus we get full wave D.C. from A.C. by full wave rectifier

ANS. (Paper continued on next page)

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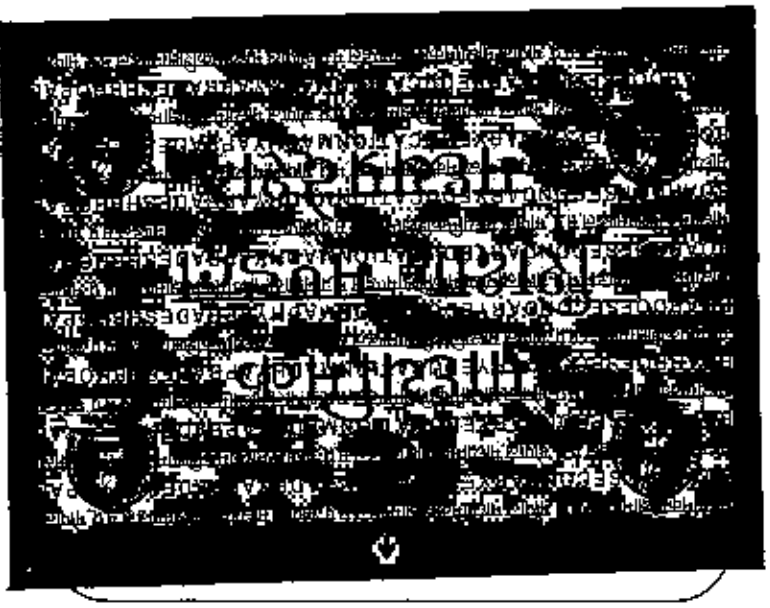
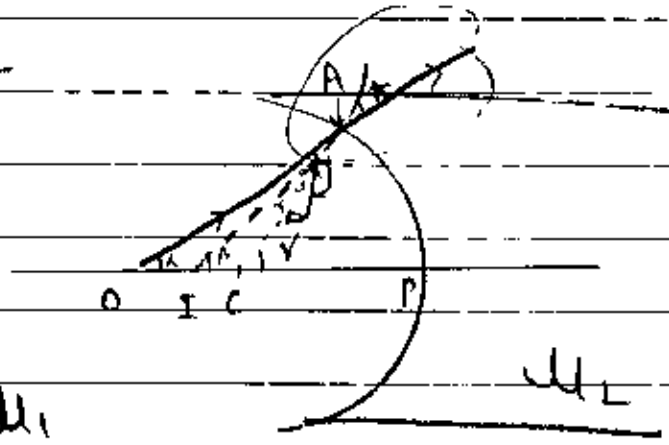


Ans 15

Ans



u_1 u_2

Distance of object from the surface $u = PO$ (-ve)

Distance of image from surface $v = PI$ = (-ve)

PC = Radius of curvature = R = (-ve)

We know that

$\frac{\text{Sin}i}{\text{Sin}r} = \mu = \frac{\text{Sin}i}{\text{Sin}r}$

If i & r are very small then

BSEMP

0

के अंकों का योग

(2)

(24)

$$\mu = \frac{i}{r}$$

$$\boxed{i = \mu r}$$

In $\triangle OAP$

$$\alpha + i = \gamma$$

$$i = \gamma - \alpha$$

In $\triangle IAP$

$$\beta + r = \gamma$$

$$r = \gamma - \beta$$

$$\therefore \gamma - \alpha = (\gamma - \beta)\mu$$

$$\gamma - \alpha = \mu\gamma - \mu\beta$$

$$\mu\beta - \alpha = \gamma(\mu - 1)$$

We Know that

$$\text{angle} = \frac{\text{Arc}}{\text{Radius}}$$

$$\alpha = \frac{PA}{PO}$$

$$\beta = \frac{PA}{PI}$$

$$\gamma = \frac{PA}{PC}$$

BSEMP

0

प्रश्न के सवाँ का अं...

(25)

$$\mu\left(\frac{PA}{PI}\right) - \left(\frac{PA}{PO}\right) = \frac{(\mu-1)\,PA}{PC}$$

$$\frac{\mu}{PI} - \frac{1}{PO} = \frac{(\mu-1)}{PC}$$

$$\frac{\mu}{(-v)} - \frac{1}{(-u)} = \left(\frac{\mu-1}{-R}\right)$$

$$\boxed{\frac{\mu}{v} - \frac{1}{u} = \frac{\mu-1}{R}}$$

Hence Proved.

Answer 1c (Ans 1c)

Q.1

Ans → A.C. dynamo is a device which convert mechanical energy into A.C. electrical energy.

A.C. dynamo is shown below :-

(Ans 1c)

Working of A.C. dynamo :- A.C. dynamo is used to produce A.C. voltage. When ABCD moves electric field is generated when it is in position ABCD (Parallel to magnetic field) But when it moves clockwise then also A.C. current is

योग पृ.

अंक Q. No ६

Q. 6

Ans 6

(2) Construction:- Field magnet N & S of A.C. dynamo

Brushes B_1 & B_2

Slip rings = C_1 & C_2

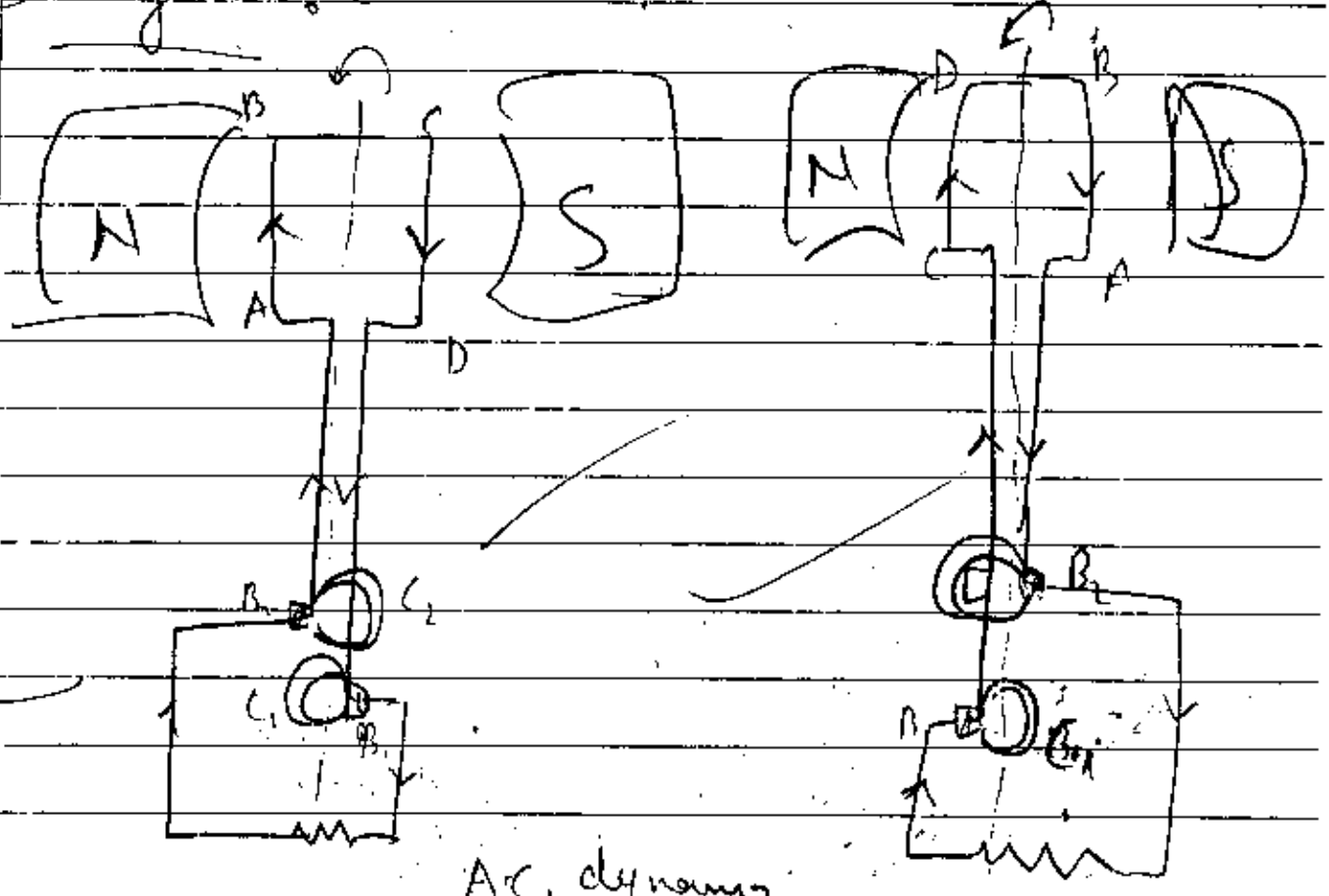
Armature = Armature coil

(3) Principle of A.C. Dynamo:- It is based on the principle of mutual induction when coil is situated in between two magnets it rotates and produce A.C. current.

(continued in before page No. 35)

Ans (c) → It is used to convert mechanical energy into A.C. electrical energy.

(1) Diagram:-



A.C. dynamo