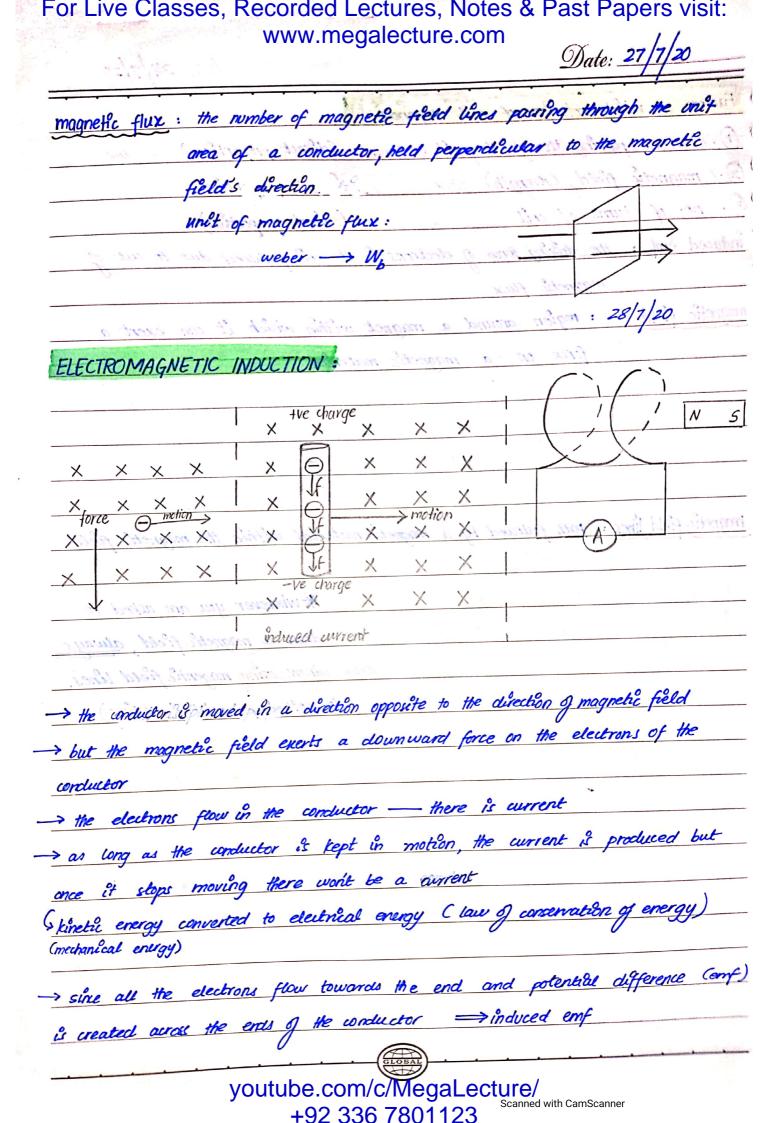
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V	27/1/20			Dale: 2	24/7/20
7	ELECTROMAGN	IETIC INDUC	HON	the tember	ionnel: dux
	-> the process in while	h an eng and	hence a curre	ent is induced	in the
	coll due to cut is	magnetil flux	- Vill	M	201
	induced emf: the dru	ving force of electri	ons in the coll	produced due	to cut of
1	magne	tic flux			
	magnetic field : reg	ion around a n	agnet within	which it can	exert a
	force	e on a magne	ebc material	ETIC INDUCTION	W. W. J. Davidson
	N S	1		i	
1		. →magnetic field			-1 2 7
			.0 4 0	a william the n	manetir field
3	magnetic field lines: pats	followed by a m	ognetic materia	with the st	X ···X · Miles
3	rectorgle			t whenever you o	
9	α apped $-\langle - \rangle$	5			field always
	magnet (draw rej	oresenting magen	he field lines.
3	Pology galbering	the country of the co	11		i but the magne
3	N - S	X	. × ×	•	anducto 0
9	<i>√ → →</i>	Khere & curpont	w.Karx.		the Mechania
	W-chaped magnet	2727 1400			
3	3	× magneti	e field lines	magneti	o field lines
	There to enqu	into	the plane of	out of	the plane of
D)	the discourse two se	But and poles	age U	Acques flow	agent the souls t
	7 CR	· Pindingd of	te cendu cros	1/2 mars sign	graphy ang
-		youtube.com/	civiegaLec	cture/	

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	when a magnetic field is cutting
394/60 11.3	the magnetic field when of a
	current carrying wire
* when flux passing through a	a constraint of the constraint
	emf, this process is called electromagnetic
induction Description with	egg) profes from By material of
arrent produced by the condu	ctor is called the induced current
omf generated by the conductor	r is called induced emf
CHAMP.	A to fift abouting of induced current ace
	ranges: blost Stonger : regist to
(1) hu movement conductor in	a stationary magnettic field .
(in) he mounts magnetic field	lines near a stationary conductor
The state of the s	lines near a stationary conductor desired
T O A . C. Plack manager	2° Andre hon I Lenzu's Law with the
Experiment to verify Electromagnet	the Induction Lenzy's Law showing
\rightarrow when α magnet is moved town	ords the call, galvanometer deflects, showing
presence of current in the coil	a competer dellects in poposite
if magnet is moved away from	the coil, galvanometer deflects in opposite
direction showing current in the	cont in the opposite acrecitor
hovever, if magnet is stationary	me coil, guiranismeses acques, off coil in the opposite direction near the coil, galvanometer does not
defiect	The state of the s
	Faraday's Laws 2 N
UUUUUU	some flow proling through a moderniter danger
The state of the s	Educed end such that betweed end to die
	of disage of flux positing through the anduar
	* the induced ent can be increased:
	Experience a stranger manusc
	has she is turn to the coil
	ार्था व्हार हिया तथा के मह तही
$left\ hand \Rightarrow force$	received the magnet files
right hand > induced cume	ent
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	195.60	Date: 29/1/20
* when flux passin	g through a conduct	for changes, then the conductor
produces current an	d generates emf., H	this process is called electromagne
Orduction Ordinal	(disposition programs	part 3 gracia o garage.
		called the induced aument
omf generated by t		
	of ace "FRIPE"	the filled other trans or holanced current
· Flux passing through	conductor changes:	the flager , mayouth field
(i) by moving a c	conductor in a statis	onary magnetle field
(ii) by moving magi	netic field whes nea	ar a stationary conductor
En 9 mayorte	the recorded disco	the differentian can be recound by a
Experiment to verify	Electromagnetic Induc	tion / Lenzy's law
→ when a magnet is	moved towards the c	call, galvanameter deflects, showing
presence of current in	he coil	
//		
if magnet is moved	away from the coil.	galvanimeter deflects in opposite
of magnet is moved	rent in the cost in	galvanometer deflects in apposite
of magnet is moved	rent in the cost in	the opposite direction
direction showing cum hovever, if magnet is	rent in the cost in	, galvanameter deflects in opposite the opposite direction the coil, galvanometer does not
direction showing currences if magnet is	rent in the cost in	the opposite direction
direction showing currences if magnet is	rent in the const in the stationary near to	the opposite direction the coil, galvanometer does not S inal inches
direction showing cum hovever, if magnet is deficit	rent in the cost in stationary near to	the opposite direction the coil, galvanometer does not S wal symbol where the coil is a symbol where the coil
direction showing cum hovever, if magnet is defiect	rent in the const in the stationary near to	the opposite direction the coil, galvanometer does not S S Simple supposite direction The coil, galvanometer does not The coil of galvanometer does no
direction showing cum hovever, if magnet is defiect	rent in the const in the stationary near to	the opposite direction the coil, galvanometer does not supposite direction supposite direc
direction showing cum hovever, if magnet is defiect	rent in the const in the stationary near to	the opposite direction the coil, galvanometer does not S S Shall symbol and plant million mult be someth At Appoint galvar with to someth I have been as your fine beauty
direction showing cum hovever, if magnet is defiect	rent in the const in the stationary near to	the opposite direction the coil, galvanometer does not shall imple a quality private multiple of the bound
direction showing cum hovever, if magnet is defiect	rent in the const in the stationary near to	the opposite direction the coil, galvanometer does not such significant through a product of the coil of the coi
direction showing cum hovever, if magnet is defiect	away from the const in the cons	the opposite direction the coil, galvanometer does not S I was justify the private the coil to several the coil the co
direction showing cum hovever, if magnet is defiect Left hand for	rent in the const in the stationary near to	the opposite direction the coil, galvanometer does not such significant through a product of the coil of the coi
direction showing cum hovever, if magnet is defiect	rent in the const in the stationary near to	the only galvanometer does not so for the only flough a unitarity through a unitarity through a manual enter the ent of the east and through the content of the manual the manual through the content of the content of the content of the content of the manual throughout such the content of t

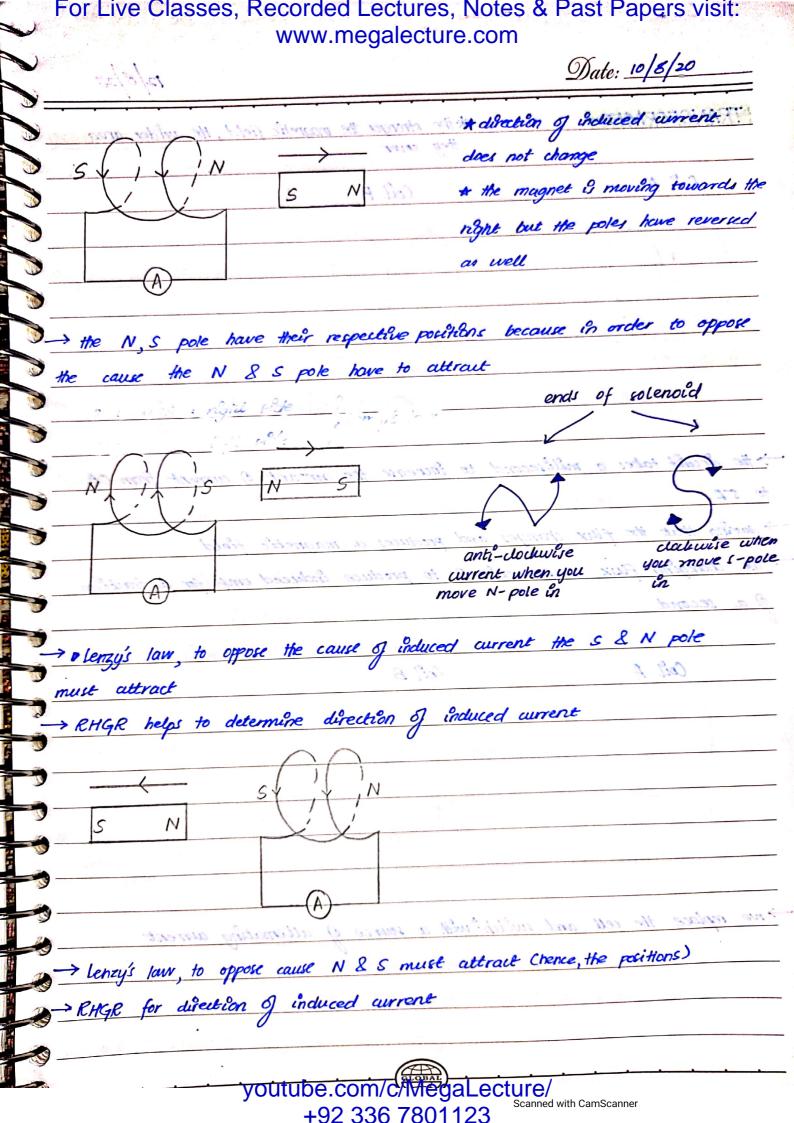
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Factors affecting induced current:
-> length of wire (directly proportional)
-> strength of magnetic field (directly proportional)
-> speed of wire (directly proportional)
and generaled by the andweley is called induced end
* to find direction of induced current use "FRHR"
1st finger : magnetic field #RIGHT HAND
2nd finger: induced current * HOLD THE FINGERS PERPENDICULAR
thumb restriction versitation in some said they standard primary notion in the
-> the direction can be reversed by either reversing direction of magnetic
field or direction of motion of conductor
" when a majoret is incress transfer the all gainsonameter depicts should
Experies of current in the cut;
-> Produced emf _ de speedsyler the tichange of spin
-> rate of change of flux of speed
*induced current femily depend on the rate of change of flux
Faraday's Law:
when flux passing through a conductor changes, the conductor produces
induced emf such that induced emf is directly proportional to the rate
of change of flux passing through the conductor
-> the induced emf can be increased:
G by using a stronger magnet
Gincreasing no. of turns in the coil
Gusing soft iron core in the coll
Compared faster
Growing the magnet faster
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	ecture.com Date: 6/8/20
Lenzy's Law.	
-> direction of induced current is always	rys such that it always opposes its
own cause in the contract of t	
induced current	
\times $\hat{\lambda}$ \times \times	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	
6	
× *** × × × × × × × × × × × × × × × × ×	Solution . Lost tan 3 Amount bound
X seX 12 X 21X Chestral 12 source	officery
	V 3
alternating current: current in which dire	com it here the coll becomes a man
(A·C) cycle	The the second of the
direct current : current in which direction	of flow remains unchanged
(OC) a wis to ashin handles;	
alternationa	alternating
alternating current	alternating current
alternating	
alternating current	
alternating current	so that when the N-N expo regel, the
alternating current	so that when the N-N wise report the lated surrent
alternating current	so that when the N-N size repol, the lated surrent.
alternating current	so that when the N-N wise report the lated surrent
alternating current	is that when the N-N con report the duted aument is able that any take: unio: N-paraw books over: cond
alternating current	i take track Gup time: direct current = 1.00 to the sum to the su
alternating current	is that when the N-N con report the duted aument is able that any take: unio: N-paraw books over: cond
alternating current	is that when the N-N con report the duted aument is able that any take: unio: N-paraw books over: cond

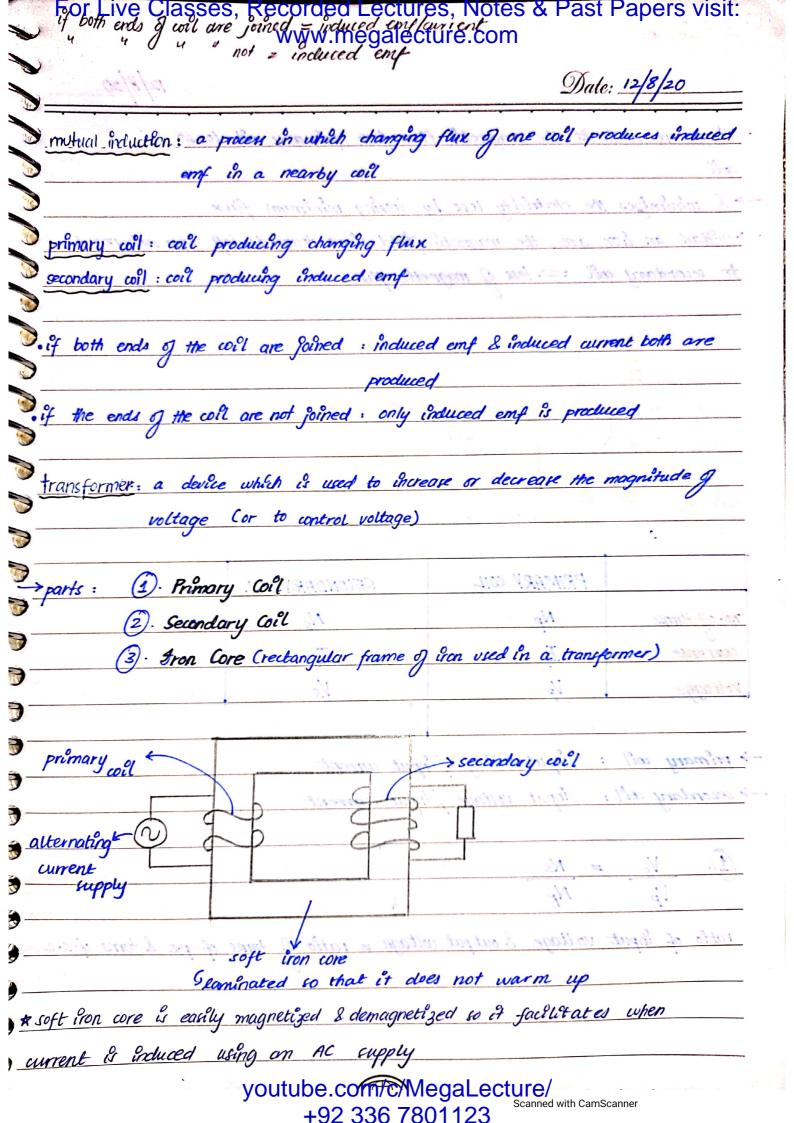
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	Lenne Lawn
notons is abused and that he shows expense the	
	ay: opposite pole
N S	
The second of th	
* induced current is not bein produced by flux is par	rung but it is not
changing	5.7
* when magnet is moved (A) to the left, induced	current is produced
* and hence, the coil becomes a magnet	1996. at 16
	of induced current.
lileft	ward motion of bar magnet
(V) city reast pe	pracom Engreunglo
to so that when the N-N poles repel, the cause is being	
induced wrent	ig opposed by the
<u>₩</u>	
A Right Hand Grip Rule:	
M 1 A/ 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	dbett wore
fingers : curl	11111 1133 1111
-> curled fingers represent direction	
	,

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will always oppose the movement of						
the bar magnet	Date: 10/8/20					
- direction of emf induced = the						
north/south pole positioning in the	Erron Law.					
coil	towards: same pole					
if the north pole of the bong bar	away: opposite pole					
magnet moves towards one end of the will be						
included at that end	<i>y</i>					
-opposition hagio, agar andar lay may						
jayein gay tou push feel hoga,						
repulsive forces b/c of same pole						
tarso away karein gay tou pull						
Noga aur attractive force hogi * induced current is not bein produced by	flux is passing but it is not					
	changing					
* when magnet is moved (A) to the left, induced current is produced						
* and hence, the coil becomes a magnet						
S) N S cause of induced current:						
	leftward motion of bar magnet					
aliensithe (A)	o'lemsers					
· CANTUIN	7112(1177)					
to so that when the N-N poles repel, the	cause is being opposed by the					
induced current						
	W					
* Right Hand Grip Rule:						
thumb: N-polesicon finish	died words					
fingers: curl						
-> curled fingers represent direction						
	•					



www.megalecture.com Date: 12/8/20 * the stronger the magnetic field, the wider area they cover Coil B Primary coil Secondary wil SA > the wrent takes a mili record to increase the amount of current to 54 (the mfl travel through softiren were and cut the sec. coil semf is induced during that the flux changes and produces a Coil B Coil A Secondary cort Primary wil with a source of alternating we replace the cell and survey & S must attract (Newer, the pesitions) diferbly of induced arrival youtube.com/c/WegaLecture/

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12,8/20		Date: 12/8/20		
→ fron core cond	uch the magnetic	faix from primary con	to secondary	
coil.	y pao			
	the electricity loss	by looning minimum f		
-> without an irm	n core the magnet	is field wines towards	left can not reach	
the secondary of	coi ^{ol} = loss of mag	grette flux	erra Par : No partence	
		•		
ee belt are	ant shirteed war	1 ar School : inclused	in the to the this	
1	11 🕱	framposts.		
3	\sim	are not letred a only De	to to mit of the all	
	3 681	<u> </u>	V	
waritude 2	e ar decresse me	विदेशी है जार्च के क्रिकाल	नोक्षेत्र क स्वावसायमा	
	owe	Cor to central pullague)		
coil			VI	
	PRIMARY COIL	SECONDARY COIL	Frank : 1 Trimor	
no g burns	Np	No Vio y	? Secreta	
current (som	ica esed la Litacion	re (redanz V ur banne bu	3 . fron C	
· Völtage	VP	Vs		
→ promary coll	: "input voltage"	input current	. Buttergui	
-> secondary will				
<u>scoor stary</u>		,	- Jakhan to	
$\widehat{\Omega}$. $V_c = N_S$				
V _P	Np	,	Edhie	
roll of bout	voltage Soutout	upltage = ratio of turns	of oc & turns of s.c	
racio of clipac	on taxan tan	woltage = ratio of turns	and of	
	,	magi tilget s demagnetls		
49,417	63 233 1 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	to the train of the man that the	house or 31x 441 41	

	Date: <u>13/8/20</u>
assuming the power was in the transformer is negligible	le De la N
2. P. = Part	77
P = VI	16 - 10 mg
Pin = Vp Ip Pout = Vs Is	the real short the
Vp Ip = Vs Is	Art in primary out
• •	Ph = Pent
Vp Is	Vote = Vite
(3). Vs = Ip Vs = Ns	TOW TOA w TOOV X S
VP Is when VP reserved the	ाहेल स्मीस्तुक वैवारवास्त्र व्यागर
is some them if second of isolates is	
primary is and willing hat constant	
A company of American Company of the	
TYPES OF TRANSFORMERS: (1). Step-up Transform	E. Hep-down transformer
(2). Step-down Trans	former du uniformet at
the that	of secondary will is lear
1. Step-up Transformer	201 of part for America to
$N_s > N_p$	Compagne He mountinde
V _s > V _p	<u> </u>
	30 5 1
Is < Ip	007.4
a transformer in which number of turns	3
of secondary coil are greater than that of	
primary coil and is ased to increase the	
magnitude of voltage T / T = b/c Vs = Ns	
$\rightarrow I_s \angle I_p b/c \qquad Vs = Ns$ $Vo \qquad Np$	
•	cavas
$\frac{V_s}{V_s} = \frac{100}{10}$	A hormon business
Vp 10	•

00/8/81		Dat	le: <u>14/8/20</u>	
Vs = 10 shiplings it is	the transform	B WH W	ar All by	Milita
Vp			·	
Vs = 10 (Vp)		. 4.	1 4 7	
dearly shows that the voltage in sec	ondary wil	will be	nove than	,
that in primary coil	•	e U.Z.		
Po = Pout 100 water	!-	- المراه	: M	• 1
Vp Ip = Vs Is		e).	4	
•	= N	$\approx T_{\rm F}$	21	, 9
when voltage increases current decreases;	exactly why	***	* 1	
atio of turns of primary will and hun				
2). Step-down transformer		3N/3672NE	15. OF 18.	÷ TYPE
a transformer in which no of turns	3		\$	
	State of the last	1		
			<u></u>	35
primary oil and is used to		Sem St.	10000 mg	42 · E
primary oil and is used to decrease the magnitude of voltage		Yerr Sec	1000 March	₩
g primary wil and is used to decrease the magnitude of voltage No 4 Np		See See	1000 to -3	7) 7) 45 - E
primary oil and & used to decrease the magnitude of voltage Ns 4 Np Vs 4 Vp		Very Str.	W <	N Y
g primary oil and is used to decrease the magnitude of voltage No 4 Np				
g primary oil and is used to decrease the magnitude of voltage No 4 Np Vo 4 Vp Io > Ip	then that of	no grates	La par	ingree /
g primary oil and is used to decrease the magnitude of voltage No 4 Np Vo 4 Vp Io > Ip		no grates	La par	ingree /
of primary ail and is used to decrease the magnitude of voltage No 4 Np Vo 4 Vp Io > Ip	than that of there are the	ne geater	La par	hierija Arezija
V ₅ ∠ V _p I ₅ > I _p	than that of increase the	no grater Lage age	lay oil w	agesta hacupa hacupa
of primary ail and is used to decrease the magnitude of voltage No 4 Np Vo 4 Vp Io > Ip	than that of there are the	no grater Lage age	lay onthe seal of the seal of	agesta hacupa hacupa

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	www.megal	etartemention of electricity over
W	1.	national and when there is loss of curren
	2/0/21	the of loss in heat energy— me current
		has to travel over Large distance
3	TRANSMISSION OF ELECTRICITY	→ voltage is inversely proportional to
1	dep-up transformer	current P=VI
1	100W = P	so we increase me voltage by using a
	100W = P	step up transformer - it goes to the
	10V × 10 A	great lines - before orea of usage we
1	100 v × 1A verhead cables	Entall a step down transformer
		consumer Aggreent.
	power station	200 - Pals
S		
3	-> overhead cables as good conductors of	her resistance to the current
1	> b). A this there will be power los	s and energy loss (to overcome the
	- he of mas, more actions of	
	resistance energy/power & used)	
		the show out to all attended the property
	Power lass = I^2R	and the same to you your of sixty
To the same of the		the type when I men to orty
	To decrease power loss:	minfroum recletance e.g/gold copper
	we a material for cable which offers.	paragram, 1000
•	alumanulm	
	> decrease amount of current by passing	ng electricity in 1000 x 14 form, or
3	the best in high wiltage	is interest august to endured to the the
	transfer electricity in high voltage	panishede of instage and decrease
	(a step-up transformer will increase m	apparade of visings and
39	that of airrent (Dogodonagua pilonia)	apply another trans market is whenever
	CNC (140, 121, 141, 141, 141, 141, 141, 141, 141	2. retarlar of all species to the
-	a step-down transformer & installed at	the end b to increase magnitude of
	a step-down transformer is with	the magnetic material placed hall to the all
	current and decrease voltage of voltage	and the second second of the second of the
	Le A I LO I applicance of curve	no de
- 3/	otherwill the electrical approach of use thick cables so that resistance is	low (minimum power lost as neat)
	MJC // WOOD ()	
1	10-4	
I		
12		
35		OBAL
	voutubo com c	Mogal octuro/

),		www.megalecture.com		
2	4.0/4		Date: 14/8/2	<u>20</u>
)	TRANSMISSION OF	ELECTRICITY	THE CHEEKE GEN	1011/16
	2 verses	step-up transformer step-do	un transformer	James James
•	, , , , , ,		100W = P	Norman State of the State of th
1	10V × 10 A		2.833	1 1 1 1 1 1 1 1
	100 V x 1A	overhead (Mu)	dis ell.	Spires Comp
	power	·	consumer	. magnet
6	station	A STATE OF THE RESERVE AS	and a market b	of the cha
7	-> overhead cables as	good conductors offer resistance	to the current	4. control for
7	bl. A this there	will be power loss and energ	y coss Cto overco	me the
•	resistance energy/power		7 m	****
	PENNANCE ENGRYPPING	1000	e & destruction of	रार्फ़ क्रीज़ क्षेत्र
	Power loss = I^2R	a marine	was total man	Broken B.
			dured correct to see	
	To decrease power loss	cable which shers minimum rests	tance e.g/gold,	copper
	-> use a material for	cable which offers minimum rests	7	
3	aluninium	current by passing electricity	y in 1000 x 1A	form or
•	- decrease comount of	O 181 stranger	rances & weduce	+ interest
3	transfer cleanuty	in high voltage per will increase magnitude of	voltage and de	rease in A
	a step-up transform	ver will increase magnifulae of	vollage una se	. Stemats .
	10 1 0 11 11 11	BOREN IN VIOLENCE FOR THE PARTY OF THE PARTY	The state of the s	
		and my frequency with the first plants	Ourses magnitus	de of
	a step-down transform	mer is installed at the end b to	e increuse magnifica	24 carrett
		waltage of waltage	17,000	
	Gotherwice the electrical	e appliances of consumer will get	damaged	as heat)
	-> use thick cables u	e appliances of consumer will get that resistance is low (min	unum power kost	in
	,	- Eng. 120.	and a superior	
				Product of the Particle Control of the Control of t
•				

www.megalecture.com Date: 17/8 ALTERNATING CURRENT GENERATOR CA.C GENERATOR) +a device which converts mechanical energy into electrical energy >it works on the principle of electromognetic induction Parts: 1. rectangular coll 2. magnet * slip rings help in illularative providing induced current to outer the coil is rotated through ance & the home > induced current is produced inside the will be of electromagnetic induction Factors affecting alternating current 1. strength of magnetic field (amplitude double) chreckly proportional) 2. rotation of will—speed (amplitude + frequency) (directly proportional) 3. no. of turns of coil (amplitude doubles) (directly proportional) 4 magnetic material placed inside the will 4 strength of magnetic field * when say flow kasta hai jahan resistance kam ho. youtube.com/c/N/egaLecture/

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	Date:
→when the c	al is rotated Yw poles of magnet then due to cut of magnetic
Jux an el	my is induced in the coll
→ when the	wil is in vertical position, out of magnetic flux is zero and
no emp is	induced in the wil
when the	will is in honzontal position, aut of magnetic flux is
maximum st	maximum emf & induced in the will
> therefore	emf in the wil varies in magnitude as well as direction
De dia Par	act as a barner bridge blu the current induced in the cour
	the output circuit.
Galso help	in reversing the direction of current after every half cycle
em! A	E .
	* at points 0,8,0, F and H will
	BD F H time is in vertical position, because
7	emf induced is zero
	* at points A, C, E and G coil is
	C 9 in honzontal position, because
	emf induced is maximum
Graphical .	changes on induced wirrent produced by A-C Generator
- graphicae.	awiges and frequency of the first trape of
1 46	turns on the coll are doubled, the induced emf is also doubled
1. 9F NO-0J	TUTAS OF THE COLF WE COURTED, THE THE
-somf	com artait
	voltage \Rightarrow doubling the turns doubles the
	maninum output voltage
	previous 1
	voltage / Time
	(GLOBAL)

	<u> Date:</u>
2. If magnet of double strength is used,	the induced emf is also doubted.
	as no and to how is to be the
emf new output	doubling the magnet strength,
vcltage	doubles the output voltage
maje (in the second	a whole the cost is in harborrous painter
previous previous	time
output	in it is not be the common to
the surene helicard to the college.	Fig the at n a tomber when you
3. If speed of coil is doubled, the indi	uced emf as well as frequency of
coil becomes double	care telp in maring the discon-
and 1	
emf	
previous output	voltage
time	
new output voltage	
	1.05
4 As a color of the ball	Det ortalial value was and ledical
	of its original value, men emp induced
as well as frequency of coil becomes	
emt 1	े. हें हर ही सेवाड़ का फिल् वर्धी कर जीवाहेबर्स, फिल्फें
nau (oulput voltage
	Topical d
provide	હેલ્લ
	voltage
	// Agnore
(5)	JOBAL .

7	www.megalecture.com
	Date:
> _	
>	Advantages of A.C for Power Transmission
	make if possible to charge in
100	200 without can be changed but the process is recurred
1	The state of the s
	→ & geourse transformers do not work with BC
	Magnetization + 2.6 supply
	At Annual D. Wash woltage Transmission Wiggin S.A. & nothing described
	Advantages of high voltage Transmission
The same	
1	
and the	
To	n.o. compared
T	Environmental and cost implications of underground power transmission compared
1	
The state of the s	to overhead lines overhead are easy to maintain (apposite for underground)
	- OVERTICAL SIGNATURE OF THE SIGNATURE O
J.	→ dangerous
	-> environment ugly hota hai
(A)	→ do not heat up
Q	

	Date:
Demagnehsation:-	Advanceages of A.C. for Power Transmission
0	the transformacy name it weather to draight
the magnet has to be with	odrawn without witching of the weuit
	wally increase resistance - current decreases -
	the France Everyterpour de not vert will to
Magnetization >> D.C sup	
emagnetization +3 A·C sup	Advantages of high voltage Transmission. May
d pewer banemission compos	vironmental and are implications of undergraund
	overtrad lines
proceeds in a	make of the same o
	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
	Enterpris alle 1019 to -