Topic: Alternating current Date: Symbol Anode Cathode. Property: When the diode is connected to a battery such that the anode is connected to the tre terminal & the cathode is connected to the negative terminal of the battery, diode offers a very low resistance and large amount of current to flow. (This condition is called forward biased) Bright Annets will show maximum and Ameter will show maximum However if we reverse the battery connection i e we connect the anode to the -ve terminal & cathode to the tre terminal diode now offers a very high resistance and allow very low/zero current to flow. (This condition is called reverse biased condition. Ammeter show zero current. Conclusion: Diode allows current to flow in one direction E stops the flow of current in opposite direction Forward biased = Current Flo-Reverse biased - current stops.

Topic:	ate:
Use:- Rectification.	
The term rectification is convecting an a form of a dic supply.	ac supply to some
How to achive Rectification.	
i)Construct graph an ac supply	of V vs to for
Vin Vout Vin	
ii) Construct a graph of	f V vs f For
resistor	
Vout	
	Halt wave
	Rectification.
Diode behaves as a Rectifier.	
ble ac de	
Disadvantage: 50% power is lost at	output
J I	
: Af Resistor is replaced by lamp it will	flicker and
brightness will vory	

Topic: Date: \_ How can the above problems be sorted out \* Place a capacitor in parallel at the output. What purpose will it serve. . When supply is at the rise capacitor will charge itself, · When the input supply begins to fall/drop, then capacitor will discharge itself via the resistor & in doing so it will provide extra charge to the resistor. · This will help to regulate/stabilize the voltage across the resistor. This effect is known as smoothing. Without capacitor With Capacitor , Discharging Chorging This is done to stabilize the autput voltage, smoothing effect.

Topic:			Date:
		* Sm more bo	charge will be inhanced charge will be given the resistor
		with 1	multiple Capacitor
Parallel vs	Series CT - C+C		New graph. $\frac{1}{C} + \frac{1}{C} + 1$
Q <sub>T</sub> =	= 2 C 2CV		$Q_{\rm f} = \frac{1}{2} C V$
			A Jn Series.

• What if multiple capacitors are unavalible how can smoothing be improved? Replace your fixed resistor from variable resistor and increase the resistonce has high as possible.
Vo Sf capacitor gets a and increase in Second Increase fraction of branch. He Resistore Current, hence it Chance many efficiently
Vo Of capacitor gets a and increase in second Jocreening larger fraction of branch. The Resistonce current, hence it Chemes mare efficiently
t improving the smoothing effect.

Topic: Full wave Rectification. Date: This can be achieved by using a combination of 4 diodes which are arranged in a special sequence. This arrangement is called Bridge Rectification or Full wave Rectification Advantage: It ensures no loss of Power at the output How does the circuit looks? 2 apposite sides (any 2) will Serve as the input (a.c.supply) Remaining 2 will be Serving ිඋ A ٧ Vinpt

A VIn Draw the accordinate of the	
A A VIn Draw the arrangement of the	
A A VIn Draw the arrangement of the	B
A A VIn Draw the arrangement of the	B
VIn VIn Draw the arrangement of the	
VIn VIn Draw the arrangement of the	
VIn Draw the arrangement of the	
Draw the arrangement of the	
	4 diodes in the blank space
such that A is at	higher potential than B
	0

Topic:	Date:
	Mark any two of and remaining by -1- and then check.
Complete	the diagram by placing Vin & Vout.

-	-			
	0	n	in	
				۰.

Exa de No 3
A
$D_2$
D3
3
i) Sketch a graph of V vs t if a CRO is connected
b/w terminals A and B?
Terminal A and B acts as input so acoop will remember
Charles the AC charles
a graph a re supply
Yao

Topic: Date: \_ ii) Sketch the graph of V vs t if CRO is now Connected b/~ C and O CED acts as output as it is connected to the Resistor hence graph will resemble full wave Reathination. iii) Sketch a graph if CRO is connected by A and D It only allows current to flow in half of the cycle it will be a half wave rectification iv) Sketch a graph if CRO is connected by B and D It only allows current to flow in half of the cycle it will be a half wave rectification V 🧟 🗍 🛇 0309 2656780 🞯 mahad\_\_amer 🛛 mahadamerchaudhry@gmail.com

Topic:

Date: \_\_\_\_\_

W) A capacitor is now connected across the output Skeeth graph of No vs t vi) The graph below is provided. T i) Time during which capacitor discharges Ans: From T1 to T2 or T2-T, ii) Time During which Capacibor Charges Ans: From T2 bo T3 iii) Suggest what happens when multiple capacitors are connected in parallel across the output? -> lines will get flatter -> Steepness of lines will decreose.

Date:\_

vii) Multiple capacitor are now replaced by a single capacitor and Variable Resistor is in place of the Resistor and resistance is maximum 14 As R increases more C S D current in Capacitor and  $D_2$ it will have more charge line will be less and steeper for discharging. groph. from the orignal graph determine the Timeperiod of the ac supply giving your answer in terms of Ti and



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