

7. Runamia Resistance

9 MOSFET:

· Infu India A VERE

B.E - Formula clist: 3) Common Base assocrat gain

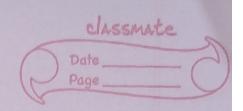
1. Half wave Rectifier:

- i) Average de cload current IDC = Im/JC
- 11) Average de cload voltage VDC = Vm/TL
- ii) RMS value of cload current-IRMS = Im /2 iv) RMS value of load voltage VRMS = Vm /2
- v) Ripple factor, f = 1.21
- vi) Rectifier refficiency = n = 40.5%

2. Full Wave Bridge Rectifier:

- i) IDC =2Im/T
- ii) Voc = 2 Vm/TC
- iii) IRMS = Im/J2
- iv YRMS = Vm/12
- vi) Reptile factor, $\gamma = 0.482$ vi) Rectifier Ufficiency = $\eta = 81.13\%$
- 3 Bridge crectifier with Fitter:
 Ripple Factor = $\gamma = 1$ $4\sqrt{3} f c R_L$

4. Zener Riode:with Load, $T_2 = V - V_2$ • Without Load, $T = V - V_2$ where $I = I_2 + I_L$



Teransistor: -> I= IB+Ic

i) Common Base current gain, $d = \underline{I}_c$

IE

ii) Common Emitter curvent gain, B = Ic

i) AvBIN de load voltage - Voc = Von 10

Relation between & and p

i) PMS value of land voltage and (i)

IB chi-de of lactor of all all

• $\mathcal{L} = \frac{\mathbf{Ic}}{\mathbf{IE}} = \frac{\mathbf{B}}{\mathbf{I} - \mathbf{B}}$ in the substitute of the substitu

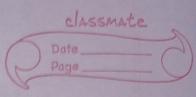
7. Rynamic Resistance

- Input = $\Re i = \Delta V_{BE}$ where V_{CE} is constant ΔI_{B}
- Output = $O_0 = \Delta V_{CE}$ where I_B is constant ΔI_C

8. Single stage R-C coupled CE amplifier:
· Vcc = IcRc + VcE

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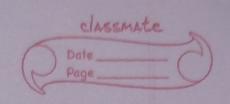
 $(V_{GS}-V_{T})^{2}$



10	· Reak coverent - Im = Vm Ret
HWR-	· Reak current - Im = Vm
	Rf+Rs+RL
	· DC Output Power, Ppc = Ipc 2 RL
	· AC Output Power, PAC = IRMS 2 (Rf+Rg+RL)
	· DC voltage . Vic = Vm/TC . RL = Vm/TC
	RL RJ+RS+RL 1+RJ+RS
	• AC Output Power, PAC = IRMS 2 (Rf+Rs+RL) • DC voltage, VdC = Vm/T . RL = Vm/TT RL Rf+Rs+RL I+ Rf+Rs RL RL RL
	· RMS cload voltage VRMS = Vm/2
	solt-Rfor = sq.
11	- Ninmum I Rad ouristance - Remin = Ve
8	· Rectification refficiency $\eta = PDC$
-	· Maximum SAId susistance - Rimar = Vz
3->	$I_{DC} = V_{DC}$
3	Plak moltage - Vm = VRMS x $\sqrt{2}$
2 7	• Puak moltage - Vm = VRMS x V2
(Full neare voridge Rectifier:
	· Im = Vm For ideal diode = Rg=0
	arg+Rs+RLI Im = Ym
393.0	• Im = Vm For ideal idiode = Rq = 0 2Rq+Rs+RL Im = Vm RL
sha	
->	Zener Diode: == == == == == == == == == == == == ==
	$P_2 = I_2 V_2$
W a	· When no load - Is = Iz(mare) + IL
	A CONTRACTOR OF THE PROPERTY O

 $-R_S = V_{un} - V_2 \qquad -I_L = V_L$

Iz (max)



- · When there is cload, Iz(min) = Is-IL
- · Zener oregulator coneuit, Rs = Vin Vs where Is = Iz +IL . De Ocatput Powers, Ppc = Ipc 2 Ps
- · Ac content Penner, Pac = Igno -: rolsianoroT -

- · VeE = Vcc IcRc
- · Vec = VeE + VBEMAY spotlary book 3MA .
- -> Minimum cload ousistance Rumin = VL a resistance - R_L min = V_L
 - · Maximum cload resistance R L max = Vz

- $IS = I_{Z(max)} + I_{L(min)}$ $I_{L(min)} = I_{S} I_{Z(max)}$ $I_{S} = V_{uin} V_{3}$ Full & Same Wridge Rutifice

· In = Vm for ideal whode = P1 = 0

 $\frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} = \frac{1}$

- · Rs = Vin Vz Is = Iz IL

> Signal voltage gain of an amplifier = Ar = Vout