0 LECTURE 8/10/2020 CIRCUITS USING DIODES OCLIPPER CIRCUITS The circuit with which the wave-form es shaped by semoning or clipping a cestain portion of the input signal voltage above or below a certain level is called a clipping circuit or clipper. Uses! Digital computees, radars, radio & t.v. receivers. (i) SERIES CLIPPER! Diode connected in series with input or load (2) SHUNT CLIPPER! Diode connected in paeallel with input or load e gro)series clipper (2) Shunt Clipper mark 3 Ri ingul 43 RL Note: Before analyzing the clipper celant one basic should be clear to Hts Forward bias Reverse Reverse Forward bias bias bias bias bias bias.

(This is not given hary book)

clippers are classified ento 4 types NEGATIVE BLASCED COMBINATIONAL POSITIVE You will see that 2 decents will have same output. Therefore I well analyze one circuit. The other ciecus will be analyzed with conditions / biasing of diodes changed: Thelefore I requesiyou to complete analysis of other cuant having same output. for enample 9 will do the analysis of first two cicuits 1 SERIES POSITIVE CLIPPER Thout Solphy + ve half cycle - ve half yde Diode es reverse Dirde 18 forward brased biased i. et acts as ... It acts as open circuit short circuit . Vo = 0 (, Vo= Ve

Now the occurr (2). (2) SHUNT POSITIVE CLIPPER Ji P F F P VAIN ve half cycle the half cycle Dis Reduce 5 Du forward biased biased. open gt acts as short circuit 1, V0=0 VO = Vi So you can see only the biasing of diodes charges. So you are requested to complete the analysis of the cleants which g am leaving Blanc.

(3) SERIES NEGATIVE CLIPPER.

(3) STORIES NEGATIVE CLIPPER.

(4) Vo. , ve half cycle tre half oyale. I is forward biased I is severse biased TOP. VO = P NONTS 1. VU= Ve (4) SHUNT NEGATIVE CLIPPER JOR JOR TO

BIASED CLIPPERS Ciecuits (1) to (4) clip the entire positive or negative portions of input signal i.e. there is no provision for adjustment of dipping level. A dipping circuit which has or provision for adjustment of a clipping level is called biased slipper. An adjustment of dippeng level is achieved by adding a beas voltage en seeres with a Liode or resistor. (5) BLASED SERIES POSITIVE CLIPPER Vi VB TO - ve half cycle tre half cycle (a) Till |Vi| \le |VB| Des Leverse biased Des reverse biased for entire cycle. Vo=-VB ". VO = VB (b) IVi) > IVB ! Cdrop acers Ris Dis forward biased neglectes) Vo = Vi absolute value of Vi IVI means is taken

(6) BLASED SHUNT POSITIVE CLIPPER (5) Transition of the state of the of disping level A dipping sincet which has on breview for aginology of a wilberd level is called bigged alipper. He Analysis same as elet 5 with Bidsing of D changed some start (7) BIASED SERIES POSITIVE CLIPPER Vi P3 VB Vb VO + we half yele - ve half cycle (a) Tell Vi (VB. Dis forward bing Dis forward biased for entre cycle (b) Vi > VB Vo=Vi Dis severse biased Vo=VB about Ivi means Con

(8) BIASED SHUNT POSITIVE CLIPPER Analysis same as circuit nos?