

Q.P. Code : 3523

(3 Hours)

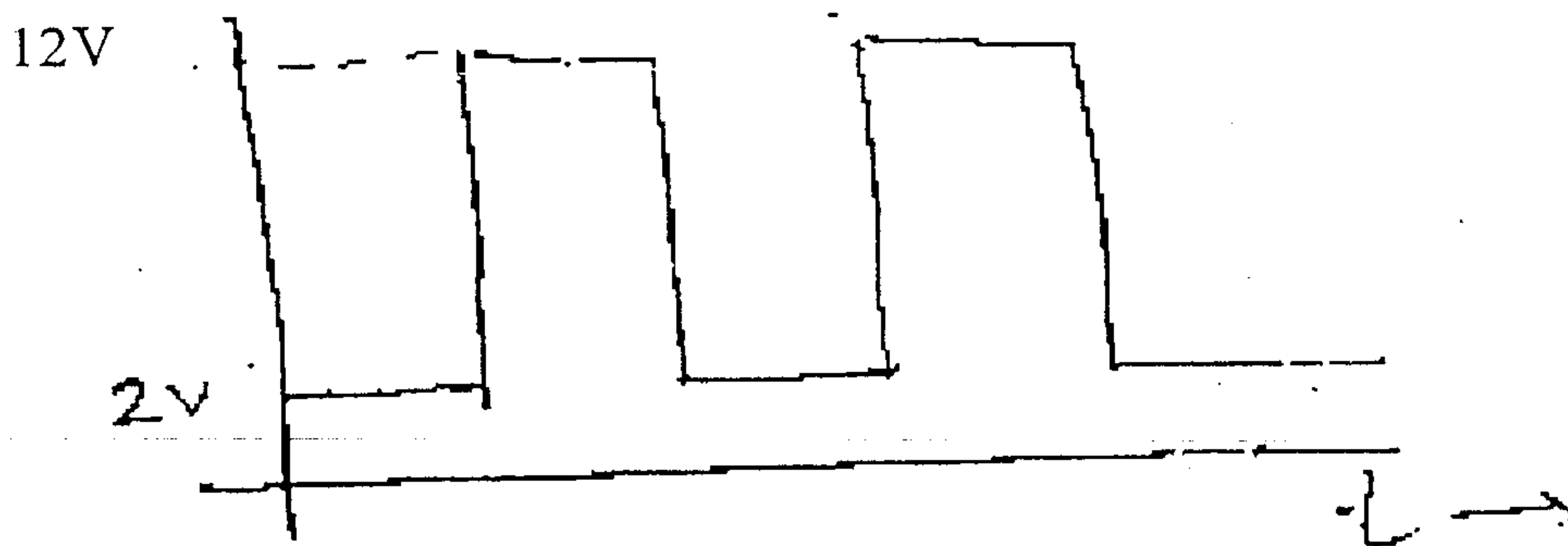
[Total Marks : 80

- N.B: (1) Question No. 1 is compulsory
 (2) Solve any three questions from remaining questions.
 (3) Assume suitable data if necessary.

1. Solve any four :

5

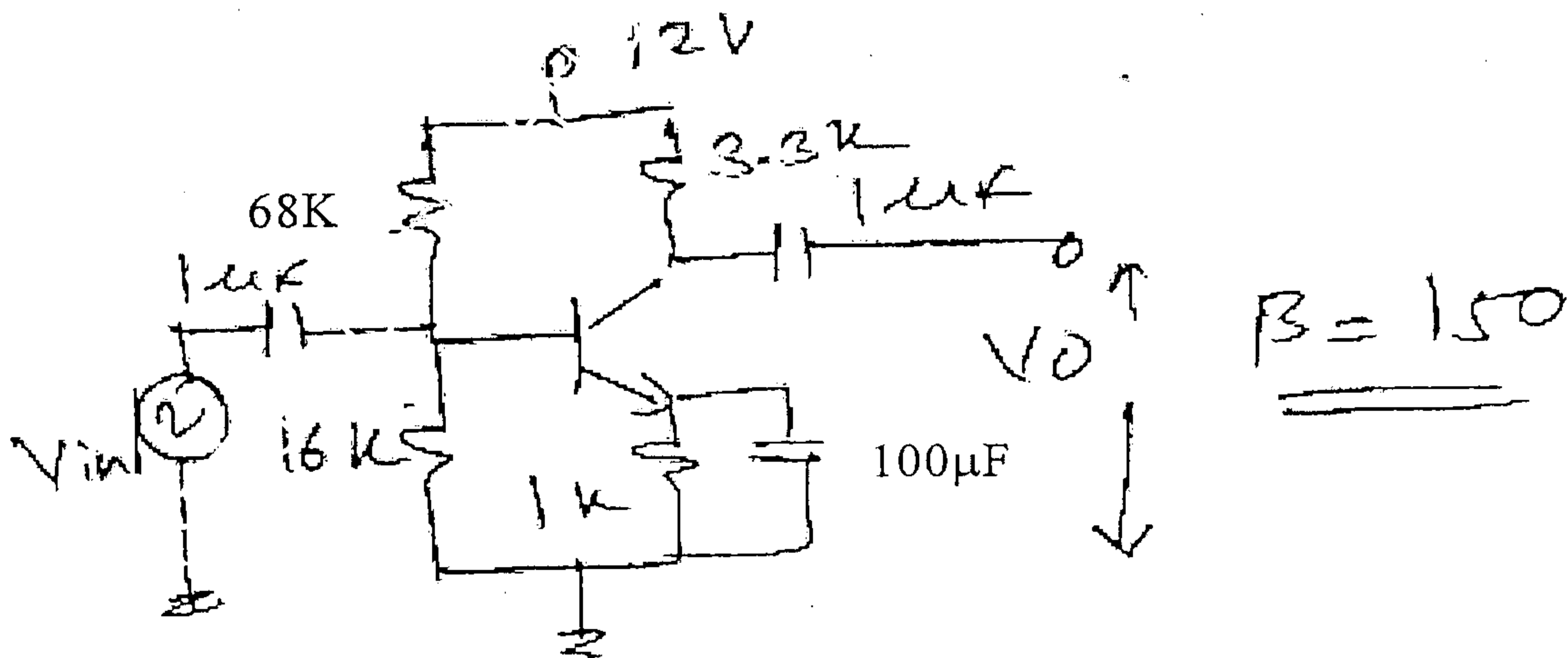
- (a) Implement appropriate circuit to generate following waveform.



- (b) Draw small signal equivalent circuit of CS amplifier with voltage divider bias. 5
 (c) Explain need for cascading of amplifiers. 5
 (d) State and explain bark hausen criteria. 5
 (e) Derive efficiency of Class A transformer coupled amplifier. 5

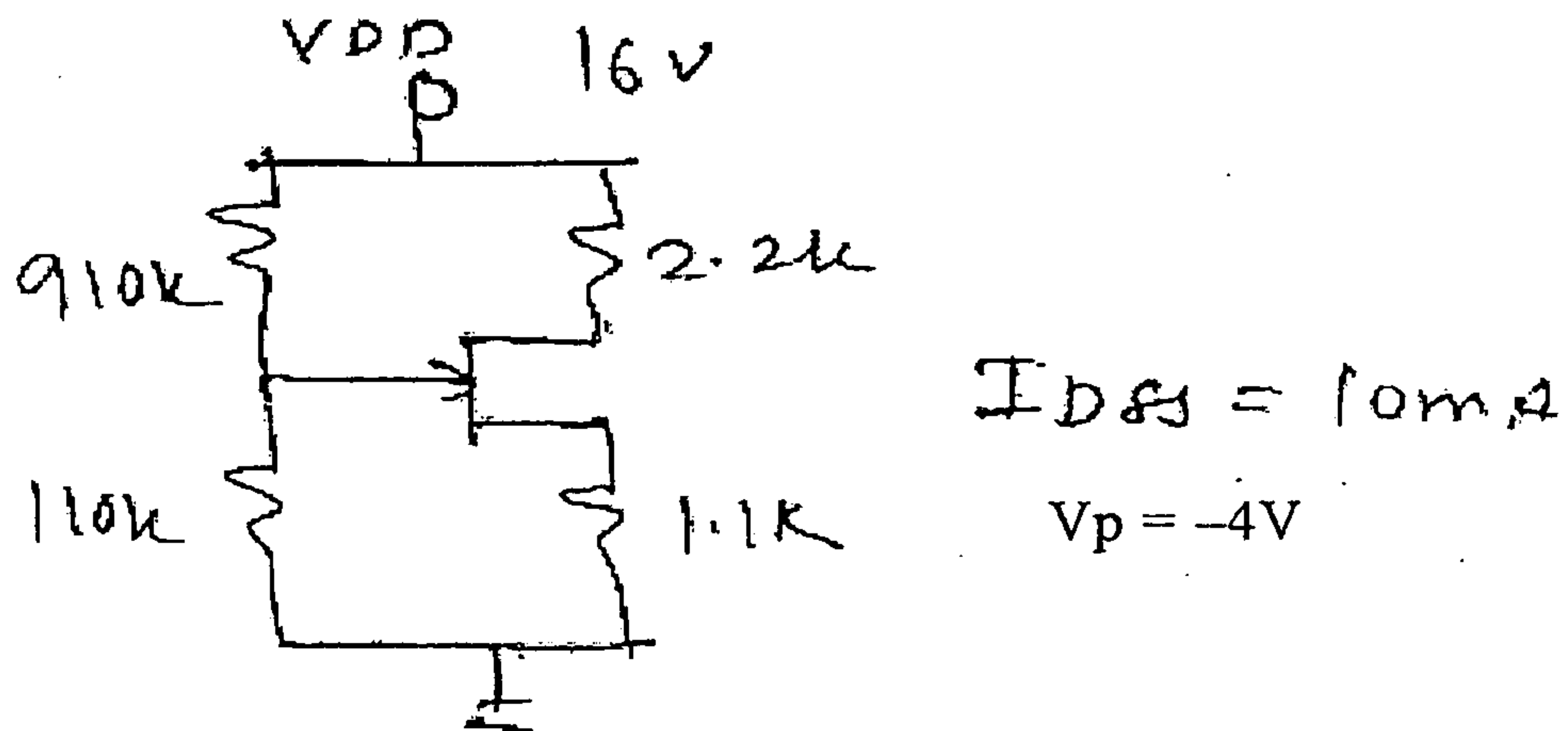
2. (a) For the given circuit determine. Z_i , Z_o , A_v .

10

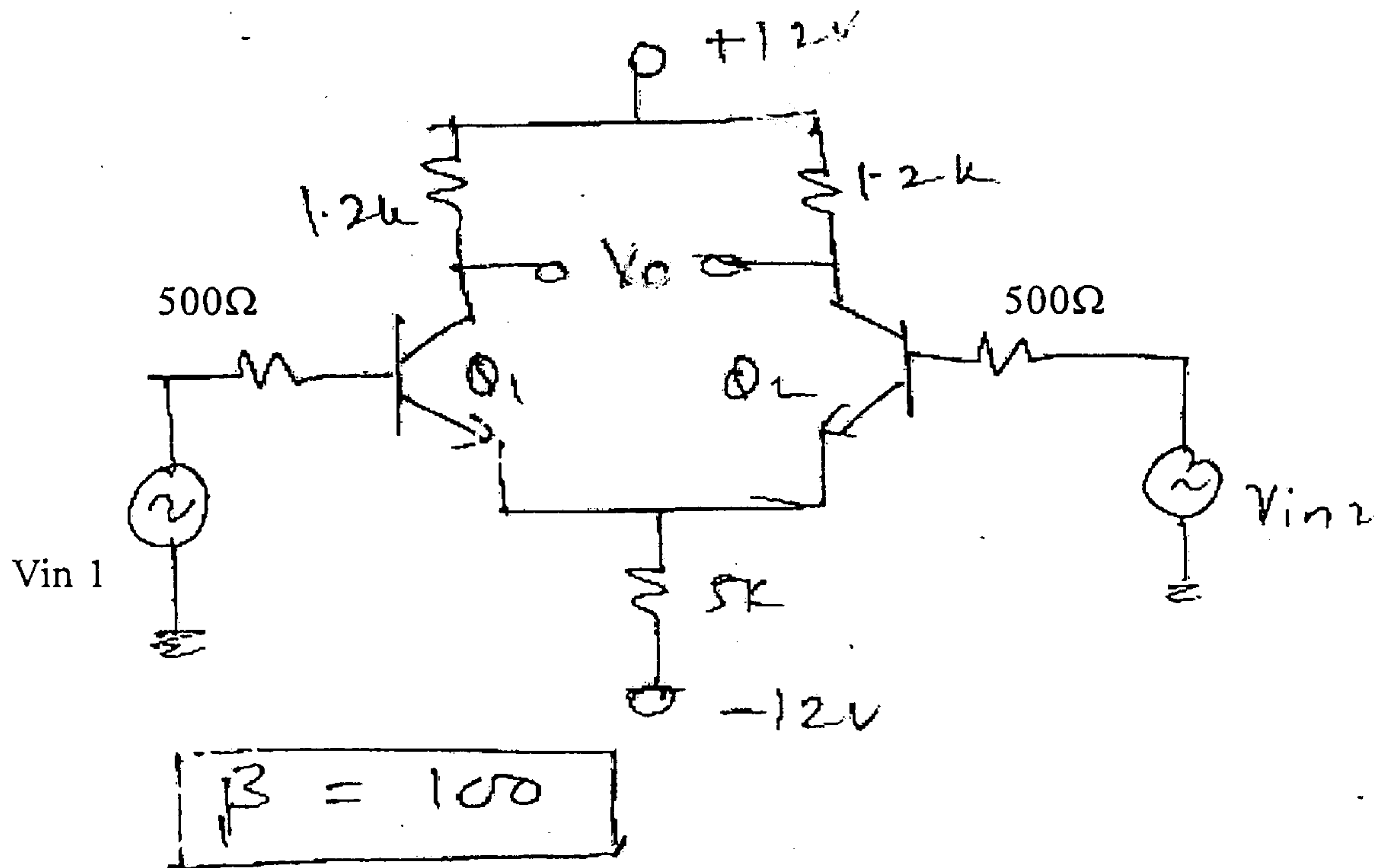


TURN OVER

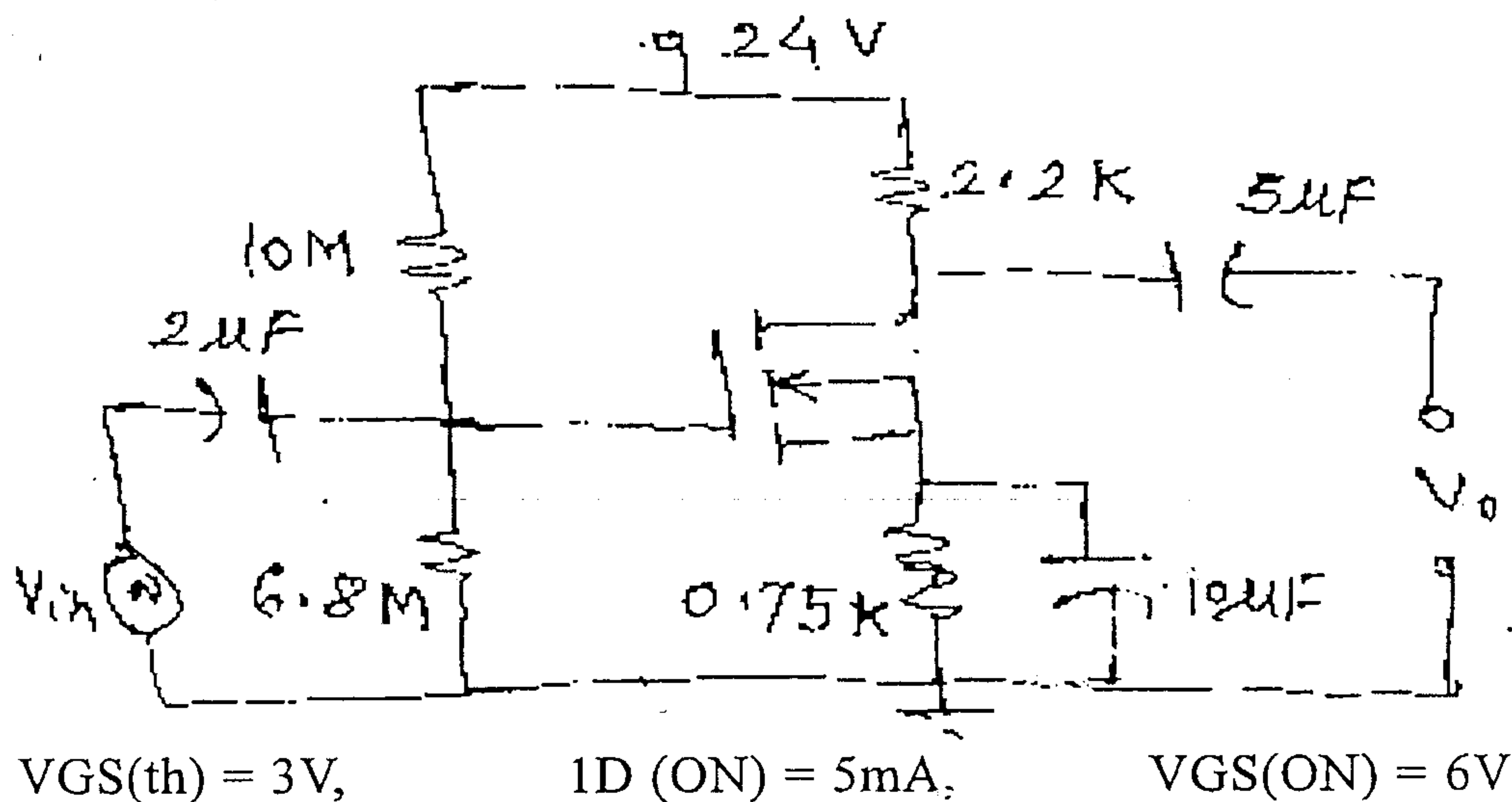
- (b) For the given circuit find I_{DQ} and V_{GSQ} . Also state in which operating region circuit works. 10



3. (a) Draw and explain working of cascode amplifier. 10
 (b) For the given differential amplifier determine I_{CQ} , V_{CEQ} , A_D and A_{cm} . 10



4. (a) Explain working of wein-Bridge oscillator and give expression for frequency of oscillation. 10
 (b) Draw block diagram of voltage shunt -ve feedback amplifier and explain effect on i/p impedance, o/p impedance and gain. 10
5. (a) For the given E-MOSFET amplifier determine, R_i , A_v & R_o . 10



- (b) Explain class B power amplifier and methods to remove cross over distortion. 10
6. Write short note on (any two) : 20
- Constant current source used in differential amplifier. (Widlar or Wilson type)
 - Crystal oscillator
 - Power MOSFETs.
 - Heat Sinks.