#### **ANSWER ALL QUESTIONS**

### Question One:

Determine Zi, Zo, Av, Ai for the circuits shown in Figs. 1,2

#### Question two:

Determine Zi ,Zo ,Av for the circuit shown in Fig.3

#### Question three:

Describe the operation of the circuit shown in Fig.4

#### Question Four:

- a)Design and draw an Op.Amp. with gain of 100 using IC 741 for noninverting input operation
- b) Design and draw a voltage controlled Oscillator to get a square wave with f = 100 KHZ using IC 566

## Question Five :

Prove that the maximum Efficiency of class A power amplifier is 25%.

$$\beta = 120$$

$$Z, \qquad \beta = 120$$

$$Z, \qquad \delta = 120$$

$$Z_{ij} \qquad \delta = 120$$

Fig.1

$$\begin{array}{c|c}
& 22 \text{ V} \\
\hline
5.6 \text{ K}\Omega \\
\hline
V_1 & C_C \\
\hline
Z. & & \\
\hline
0.47 \text{ K}\Omega & C_E
\end{array}$$

Fig.2

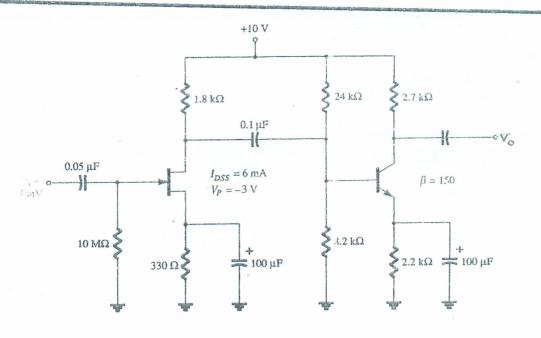


Fig.3

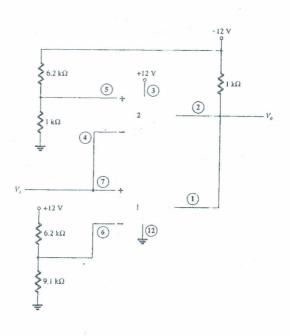


Fig.4

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# Good Luck

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