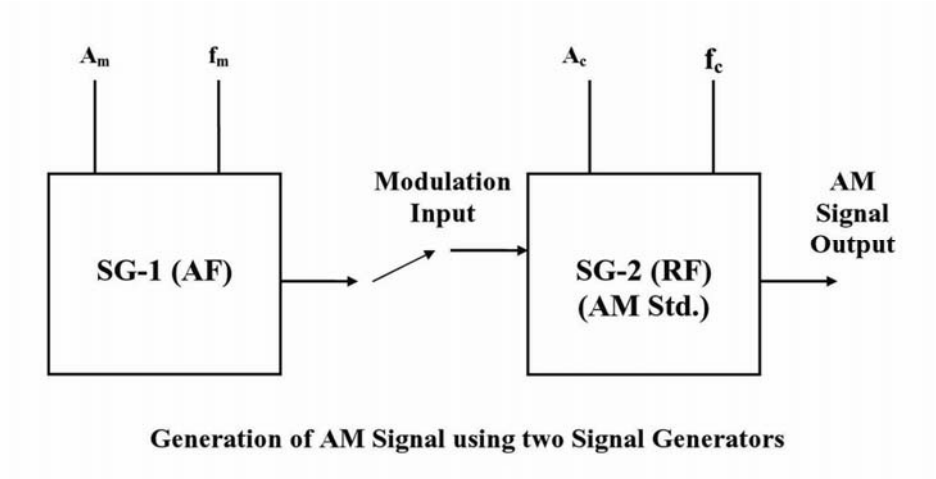
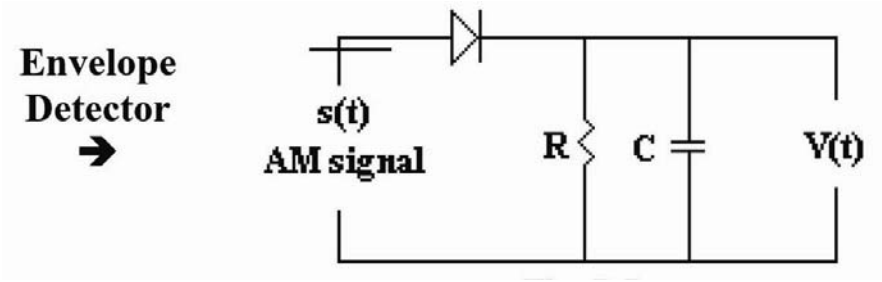
# Experiment # 05 (Envelop Detector)

**Object:-** (a) Determine the typical values of the parameters of the AM signal properly detected by the given Envelop Detector Circuit.
(b) Determine its Detection Characteristics (max. m at a constant $f_m$ & max. $f_m$ at constant m).

## Experimental Setup:-




Generation of AM Signal using two Signal Generators




## Observations:-

**Part (a): Specifications of the AM signal** for its proper detection (without distortion) -

| | | | |
|---|---|---|---|
| AM Level, | $A_{max}$ | = ------ | Vp-p (adjusted by ampl-contr of SG-2) |
| Modulation frequency, | $f_m$ | = ------ | Hz (adjusted by freq-contr of SG-1) |
| Modulation Index, | m | = ------ | % (adjusted by ampl-contr of SG-1) |
| Carrier frequency, | $f_c$ | = ------ | KHz (adjusted by freq-contr of SG-2) |

## Part (b): Detection Characteristics:-

(1) Maximum permissible value of the modulation frequency of the AM signal detected by the given Envelop Detector without any distortion is governed by the expression:-

; $\max f_m = 5.8(m^{-2} - 1)^{1/2}$

Typically for m = 40 %, R = 2.7 K and C = 0.01 µF, maximum value of $f_m$ for undistorted detector's output = 13 KHZ

(2) Maximum permissible value of the modulation index of the AM signal detected by the given Envelop Detector ( at $f_m$ = --------- KHz**) =** ---------- **%**

**Results:-** Max. m (at $f_m$ = ------- Hz) = ------ %
Max $f_m$ (at m = -------- %) = --------- KHz