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A-9

Experiment-2 (web)

Aim:- To study the root mean square (RMS) peak and peak-to-peak values, measurements with oscilloscope

Theory:-

#Peak value:- The maximum value attained by an alternating quantity during one cycle is called its peak value.

RMS value:- The steady current which, when flows through resistor of known resistance for a given period of time then and a result the same quantity of heat is produced by the A.C when flows through the same resistor for the same speed of time is called R.M.S value of A.C

Peak to Peak value: The full voltage of two positive and negative peaks of the waveform that is; the sum of the magnitude of positive & negative peak.

Average value:- The average of all the instantaneous value of an alternating voltage and currents over one complete cycle is called as average value.

4- $V_{p-p} = 2 \times 20 = 40$

5- $V_{p-p} = 2 \times 25 = 50$

6- $V_{p-p} = 2 \times 30 = 60$

7- $V_{p-p} = 2 \times 35 = 70$

Vrms to Vp-p

$$V_{p-p} = 2\sqrt{2} \times V_{rms}$$

1- $V_{p-p} = 2\sqrt{2} \times 5 = 10\sqrt{2}$

2- $V_{p-p} = 2\sqrt{2} \times 10 = 20\sqrt{2}$

3- $V_{p-p} = 2\sqrt{2} \times 15 = 30\sqrt{2}$

4- $V_{p-p} = 2\sqrt{2} \times 20 = 40\sqrt{2}$

5- $V_{p-p} = 2\sqrt{2} \times 25 = 50\sqrt{2}$

6- $V_{p-p} = 2\sqrt{2} \times 30 = 60\sqrt{2}$

7- $V_{p-p} = 2\sqrt{2} \times 35 = 70\sqrt{2}$