Answer all the following Questions
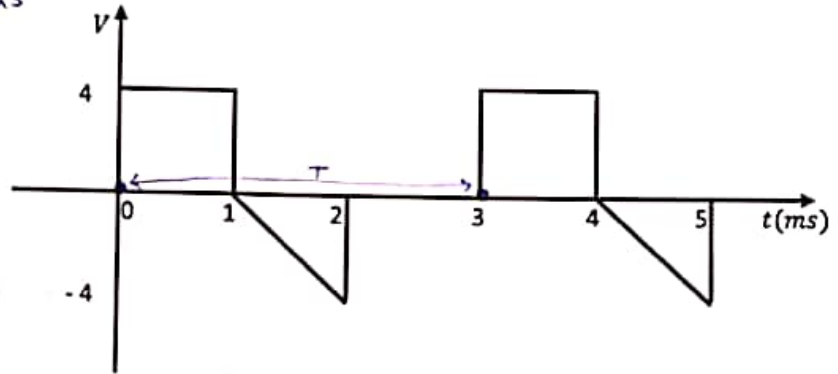
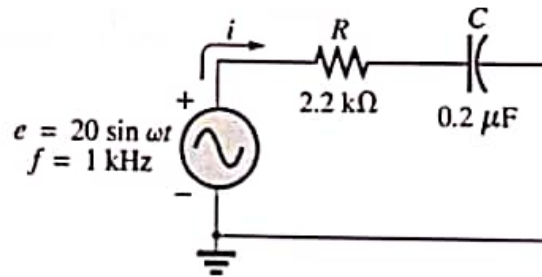**Q1-** For the given periodic waveform, find:

- **(i)** The period (T)? 3 ms
- **(ii)** The frequency (f)?
- **(iii)** The average value?
- **(iv)** The RMS value?

Q2 For the given network:

- **(i)** Determine Z_T.
- **(ii)** Calculate V_C.
- **(iii)** Draw the phasor diagram.

$e = 20 \sin \omega t$
$f = 1$ kHz

$R = 2.2$ kΩ $C = 0.2$ μF

Q3 Find the element or elements that must be in Z to satisfy power factor $P_f = 0.83$ (leading).

I = 25 A

60V∠0°   5Ω   4Ω   Z