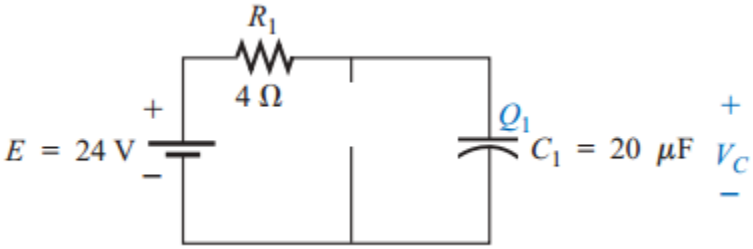
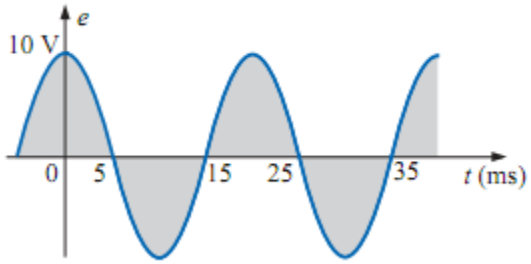
North East University Bangladesh,
Spring 2020, Course Code: CSE-121 Course Title: Basic Electrical Engineering
Final Assignment Marks=20

Consider the following Circuit



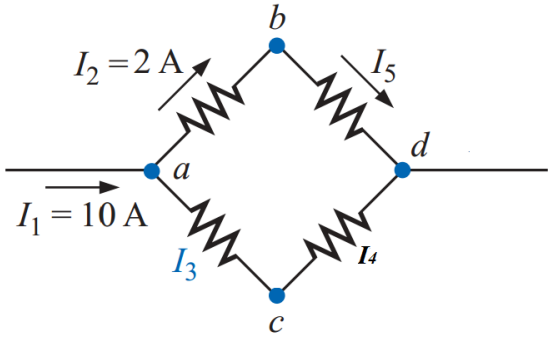
1. A) How much time does it take to get fully charged?
   B) Energy stored by the capacitor C1 = ?

Consider the following figure.



2. A) Write the equation for voltage for the sinusoidal wave above.
   B) Determine frequency.
   C) Find Equivalent DC voltage $E_{eff.}$.

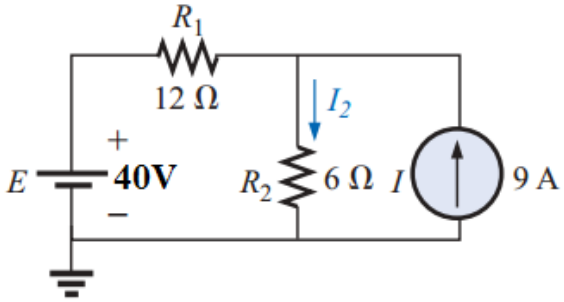
3. Find **I_3**, **I_4** and **I_5** from the following



4. You have four capacitors of 10uF. Can you make 25uF using these? Draw the circuit.
5. Write short note
   I. Norton Theorem.
   II. Thevenin Theorem

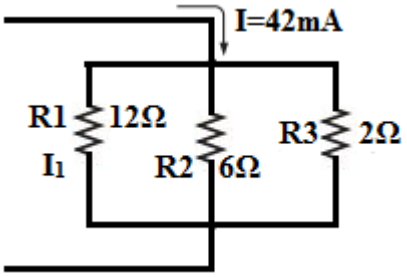
North East University Bangladesh,
Spring 2020, Course Code: CSE-121 Course Title: Basic Electrical Engineering
Final Assignment Marks=20

6. Apply superposition theorem and find current $\mathbf{I_2}$ from the circuit below.

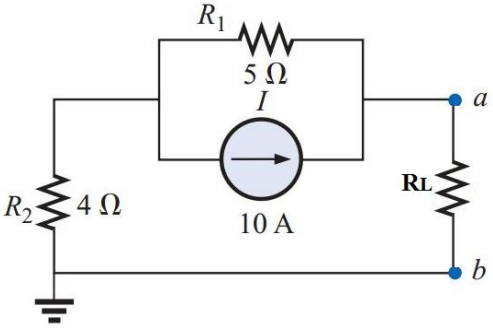


7.
   i. Write difference between DC and AC.
   ii. Calculate power factor where $\boldsymbol{v = 120 \sin(\omega t + 80°)}$ and $\boldsymbol{i = 5 \sin(\omega t + 30°)}$

8. Calculate $\mathbf{I_1}$ from the following



9. Find Norton equivalent of the following circuit.



10. What is the condition for a load to receive maximum power? Calculate maximum power for $\mathbf{R_L}$ in the following circuit.