

Metropolitan University

Department of CSE

Partial Final Examination Part-2, Spring 2021

Course: CSE 123: Basic Electrical Engineering

Batch: CSE 50 A+B+C

Marks: 20

Answer all the questions

- Question 1:** Figure 1 showing a capacitive circuit having a supply voltage of $V = 100$ volts. If a charge $Q = 150 \mu\text{C}$ is generated from the source V and travel through the circuit, then determine the voltage and charge across each load of the given circuit. [a, b = $20 \mu\text{F}$; x, y, z = $75 \mu\text{F}$; p, q, r, m = $60 \mu\text{F}$] **8**

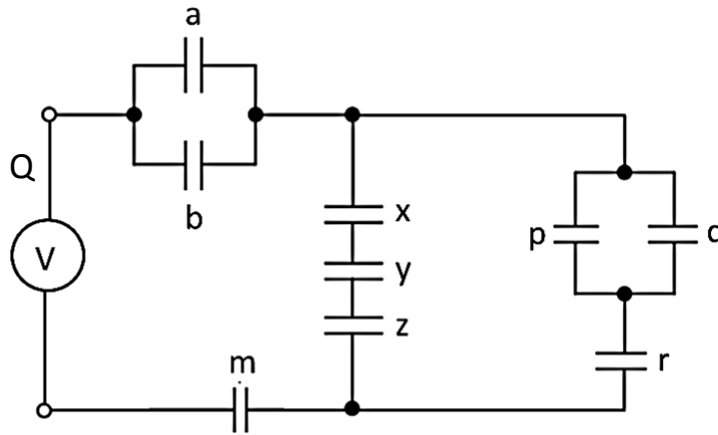


Figure 1

- Question 2:** Draw the waveforms for v , i and p . [Hints: Use the value of θ in degree as the last three digits of your ID. Draw all the waveforms in a single coordinate system. Label the waveforms appropriately. Use black color ballpoint pen for v , blue color ballpoint pen for i and pencil for p .] **12**

$$\begin{aligned}v &= 20 \sin(\omega t + \theta) \\i &= 28 \cos(\omega t - 0.5\theta) \\p &= 65 \sin(2\omega t + 0.7\theta)\end{aligned}$$