



Basic Electrical Engineering

Assignment # 2

Due date: _____

Question 1:

Find the amount of charge stored in device D such that the waveform of the applied current is given by Fig. 1. Also write the equation of current $i(t)$ for each segment where t is independent variable.

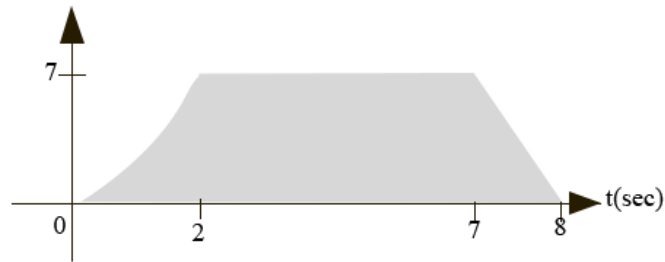


Fig. 1

Question 2:

Write the following code in MATLAB and submit the generated plot as print.

```
I = [2, 4, 6, 8, 10];
```

```
V = [1, 2, 3, 4, 5];
```

```
plot(I, V);
```

Question 3:

- What is the difference between Active and Passive devices?
- Why a resistor cannot store energy but a capacitor or an inductor does?

Question 4:

Find $(\mathbf{A} \times \mathbf{B}) \cdot \mathbf{C}$ such that

$$\mathbf{A} = 3\mathbf{i} + 2\mathbf{j} - \mathbf{k}$$

$$\mathbf{B} = 2\mathbf{i} - \mathbf{j} + 3\mathbf{k}$$

$$\mathbf{C} = -\mathbf{i} + 3\mathbf{j} + 2\mathbf{k}$$