



**Answer all the questions:**

1. Write the output of the given MATLAB commands: (10 Marks)

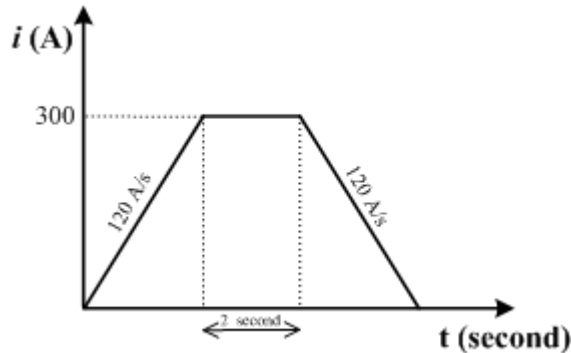
- (a) `a=[1 2 3]; b= repmat(a,3,1), c=flipr(b), d=2.^c, size(d), length(d)`
- (b) `e=1:9; A=reshape(e,3,3), A(4,1:3)=[5 8 11], A(:,3)=[],[i,j]=find(A>=7), B(1:6)=A(1:3,:), B1=B(logical([1 0 0 1 0 1]))`
- (c) `C=[1 3 5; 2 4 6; 3 6 9]; D=C(1:3,3:-1:1), E=[D([1 3], :) D(1:2,[1 3])], F=E(:,[1 3 5]), F', max(D)`
- (d) `B3=rem(-15,4), mod(-15,4), rem(-17,-4), mod(-17,-4)`

2. (a) What are the function of the following MATLAB commands: (5 Marks)

- (i) `mkdir`, `polyder`    (ii) `sub2ind`, `deconv`    (iii) `eval`, `polyval`
- (iv) `logical`, `find`    (v) `whos`, `what` (7 Marks)

(b) A coil having a self-induction coefficient of 0.2 H and a winding resistance of 0.6Ω. The current in it increases from zero to 300A at the rate of 120 A/s. Then remains constant at 300A for 2 s and then falls uniformly to zero in rate of 120 A/s as shown in fig(1). Write a MATLAB Program to draw  $i$ ,  $V_R$ ,  $V_L$ ,  $V_{coil}$  in separate graphs at the same window when time varies from 0 to 7 s with step 0.001. Then call the different values of the current and voltages at 1, 3, 5 second also print out the index of the max. value of  $V_{coil}$ .

3. A sinusoidal supply voltage of 220 v, 50 Hz is applied on a series RLC circuit, Write a MATLAB Program ask the user to enter the values of the circuit parameters then sketch the current, voltages ( $v_c$ ,  $v_L$ ,  $v_R$ ) and power ( $P_c$ ,  $P_L$ ,  $P_R$ ) waveforms for t varies from 0 to 20 ms with step 0.01 ms. From the graphs determine the average and RMS values of the current also determine the average power dissipation across each element. (8 Marks)



**Fig.(1)**

**Good Luck**  
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