المادة : بحيات في الهندسة الكهربية

الفرقه : الثانيه التاريخ: 2011-6-7 الزمن : ٣ ساعة

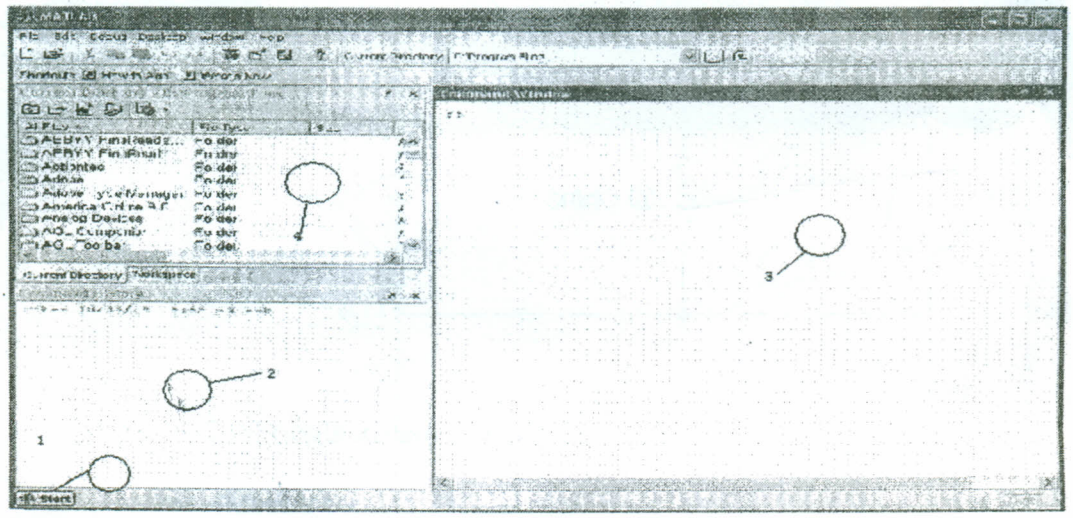
Try all questions

Q1

A-Define the Matlab as a software programming language and what is the difference between it and other languages, use examples as much as you can?

B-What it means m-files?

C- The following figure is the environment of the matlab, explain every part of it (1, 2, 3, 4)?



Q2

Given the following complex matrices A and B using Matlab to write a matlab code that performs the operations indicated as follows and print all the results?

$$A = \begin{bmatrix} [3e^{(j\pi/3)}] & 6\cos\left(\frac{\pi}{6}\right) + i6\sin\left(\frac{\pi}{6}\right) \\ 3+4i & 4.23e^{(-i\pi/18)} + 9 \end{bmatrix}$$

$$B = \begin{bmatrix} 5-9j & 5e^{(j(\pi/3+\pi/5)} \\ (2-3j)^{3.3} & \log(6-8j) \end{bmatrix}$$

C = det(A)	*D = conj(A)*	*F = A. ^ B*	*E = A ^ 2*
G = A'	*H = A.'*	*I = [A B]*	*J = [A; B]*
K = I(1, :)	*L = J(:, 1)*	*M = eig(A)*	

Q3

"Kirchhoff's current law states that for any electrical circuit, the algebraic sum

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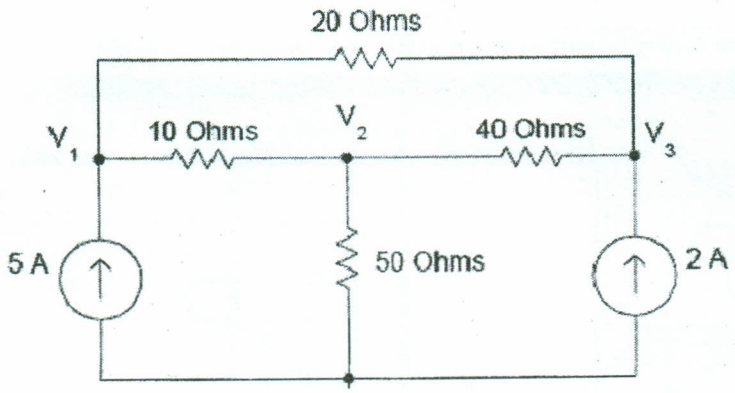
of all the currents at any node in the circuit equals zero." Based on that statement explain an algorithm which could be used to determine the currents in a n electricl circuit.

A- Explain and analysis the algorithm.

B- B-Write pseudo code and draw the flowchart.

C- C-Write Matlab code to implement that algorithm on the following circuit.



Q4

Repeat the same as in question 3 but use the admittance matrix algorithm?

Q5

Use the following circuit and repeat as in problem 3 to find all branches currents (use mesh current analysis method)