**Question (4):** Find the ***Voltage*** across **C1** of **figure (1**) using ***Source transformation*** method ***(10 marks)***

|  |  |
| --- | --- |
|  | **Figure (1)** |

**Question (5):**

From the circuit shown in figure (**2**), **If (Vo =**$ 4\overline{\left|45\right.^{o}}$**) and (ω=106 rad/sec**):

1. **Find** the *real and imaginary* parts **of Z1** ***(6 marks)***
2. **Find** the *total impedance* of the circuit  ***(2 marks)***
3. **Calculate***the power factor*of the circuit ***(2 marks)***
4. **Draw** the *phasor diagram* that contains **all** **currents** and **voltages  *(5 marks)***

|  |  |
| --- | --- |
|  | **Figure (2)** |

**Question (6):** Find **vx** in the circuit of figure (**3**) using the following theorems:

1. ***Nodal Analysis method (6 marks)***
2. ***Source transformation method*   *(6 marks)***
3. ***Mesh loop method (8 marks)***

|  |  |
| --- | --- |
|  | **Figure (3)** |