ELEC ENG 2CJ4   **INSTRUCTOR NAME**
                                          JUN CHEN

McMaster University Final Examination

DAY CLASS
DURATION OF EXAMINATION: 2 Hours
McMASTER UNIVERSITY FINAL EXAMINATION

This examination paper includes 4 pages and 7 questions. You are responsible for ensuring that your copy of the paper is complete. Bring any discrepancy to the attention of your invigilator.

1. Use of Casio FX-991 calculator <u>only</u> is allowed.

2. There are seven questions. Please answer all of them.

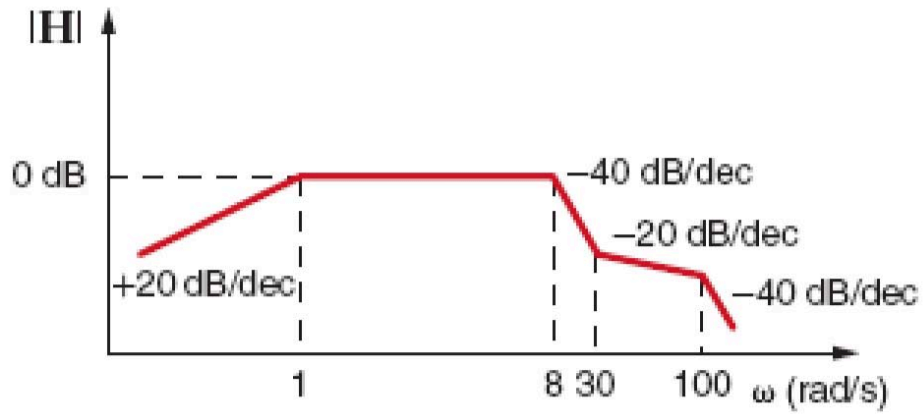1. Find $\mathbf{H}(j\omega)$ if its magnitude characteristic is shown in Fig. 1.

Figure 1

(10%)

2. Given the following functions $\mathbf{F}(s)$, find the inverse Laplace transform of each function.

$$\text{(a) } \mathbf{F}(s) = \frac{10(s+1)}{s^2 + 2s + 2}$$

$$\text{(b) } \mathbf{F}(s) = \frac{s+1}{s(s^2 + 4s + 5)}$$

(15%)

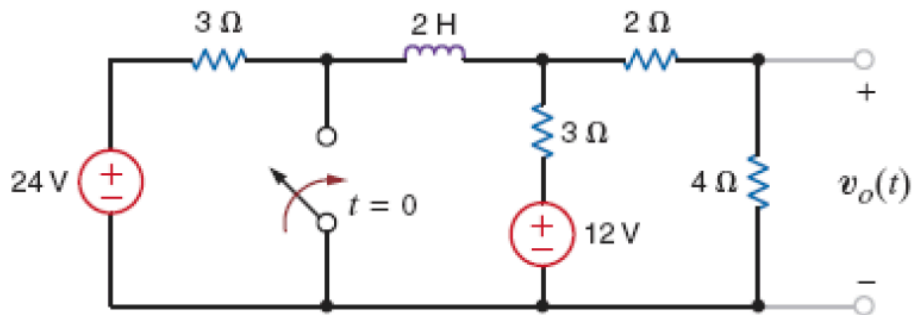3. Find $v_0(t), t > 0$, in the circuit in Fig. 2

Figure 2

(15%)

4. Find $v_o(t)$, for $t > 0$, in the network in Fig. 3
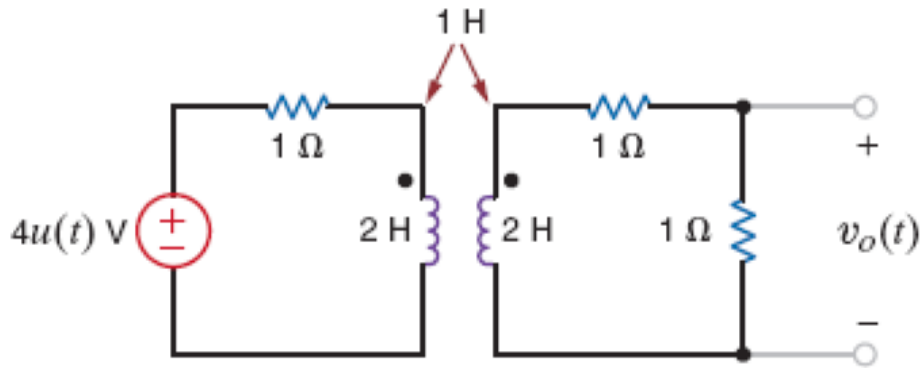

Figure 3

(15%)

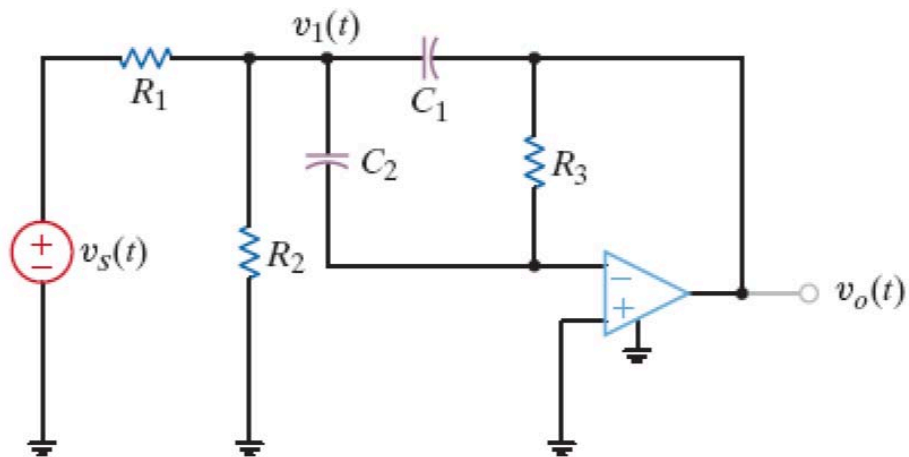5. Find the transfer function for the network in Fig. 4.

Figure 4

(15%)

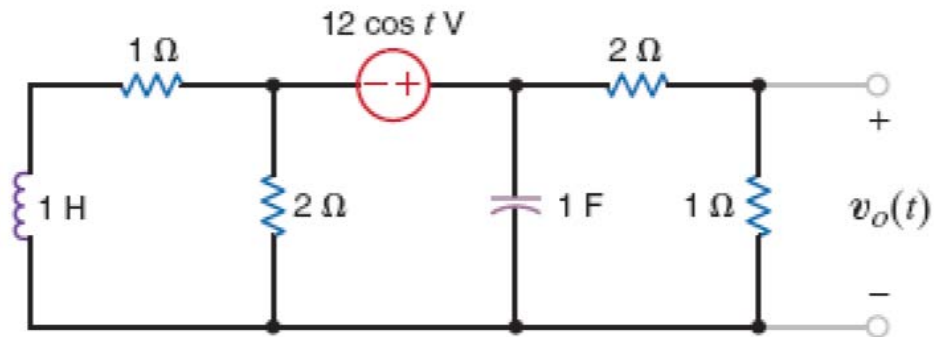6. Find the steady-state response $v_o(t)$ for the network in Fig.5.

Figure 5

(15%)

7. Find the Z parameters for the two-port network in Fig.6 and then determine $\mathbf{I}_o$ for the specified terminal conditions.
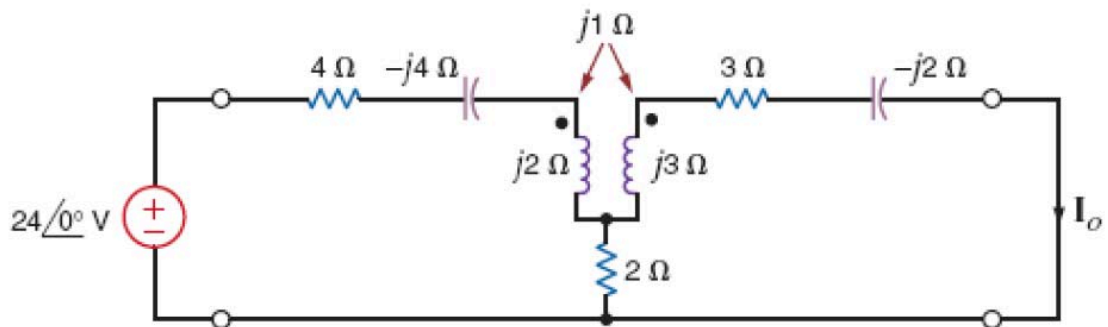

Figure 6

(15%)