EE2005 Tutorial Assignment (Week 7) **Score: /10**

Student ID: _____ Student Name: _____

1) Determine the current I_o in the circuit of Fig 1 in phasor form. 1 mark

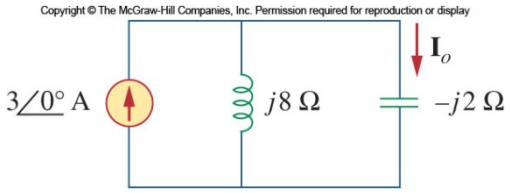

Fig 1

2) Find $i_x(t)$ in the circuit of Fig 2 in cosine form, given $v_s(t) = 20 \sin(100t - 40°)$ V. 4 marks

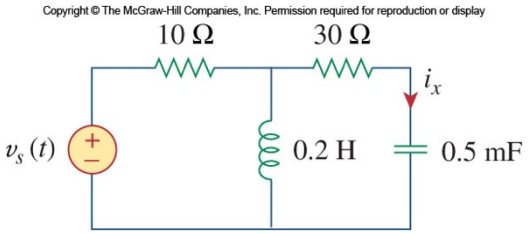

Fig 2

3) For the circuit in Fig 3 where $i_s = 0.12 \cos(6t + 10°)$ A and $v_s = 9$ V, 5 marks
   a) Find v_x at DC;
   b) Find $v_x(t)$ at 6 rad/s in cosine form;
   c) Hence, find the current through the 16Ω resistor (I_x) at all frequencies;
   d) Find the average power consumed by the 16Ω resistor.

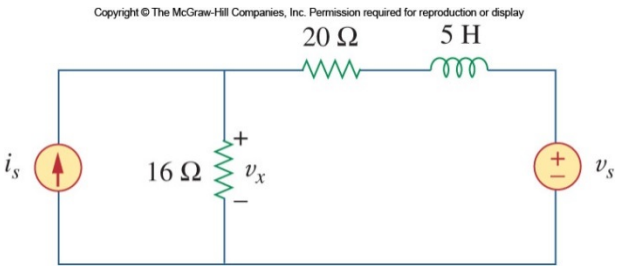

Fig 3