

Network Signals & System  
Quiz 2  
Spring 2023

Read questions carefully.

- Write your Roll Number neatly on top right of your each answer sheet. Put page numbers.
- State clearly any assumptions (if you are making one) and its reason in the answer.
- Plagiarism/cheating, **use of electronic devices and/or communication apps/devices is prohibited**. You can use only Moodle announcements for communication during the exam hour.
- Answer to the point.
- You have 50 minutes to complete the exam.
- List any assumptions clearly.
- Show all your work

1. In the figure 1 given below,  $I_L$  is a load current (current drawn by the load). What will be the value of load current  $I_L$  for which power absorbed by load is maximum. [20]

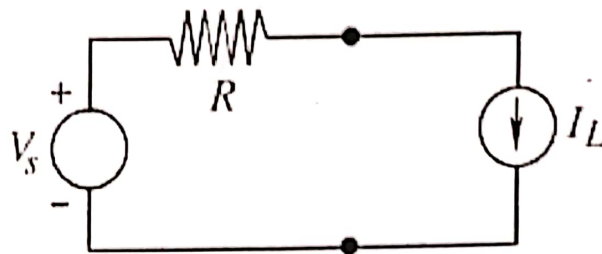


Figure 1

2. For (Figure 2)

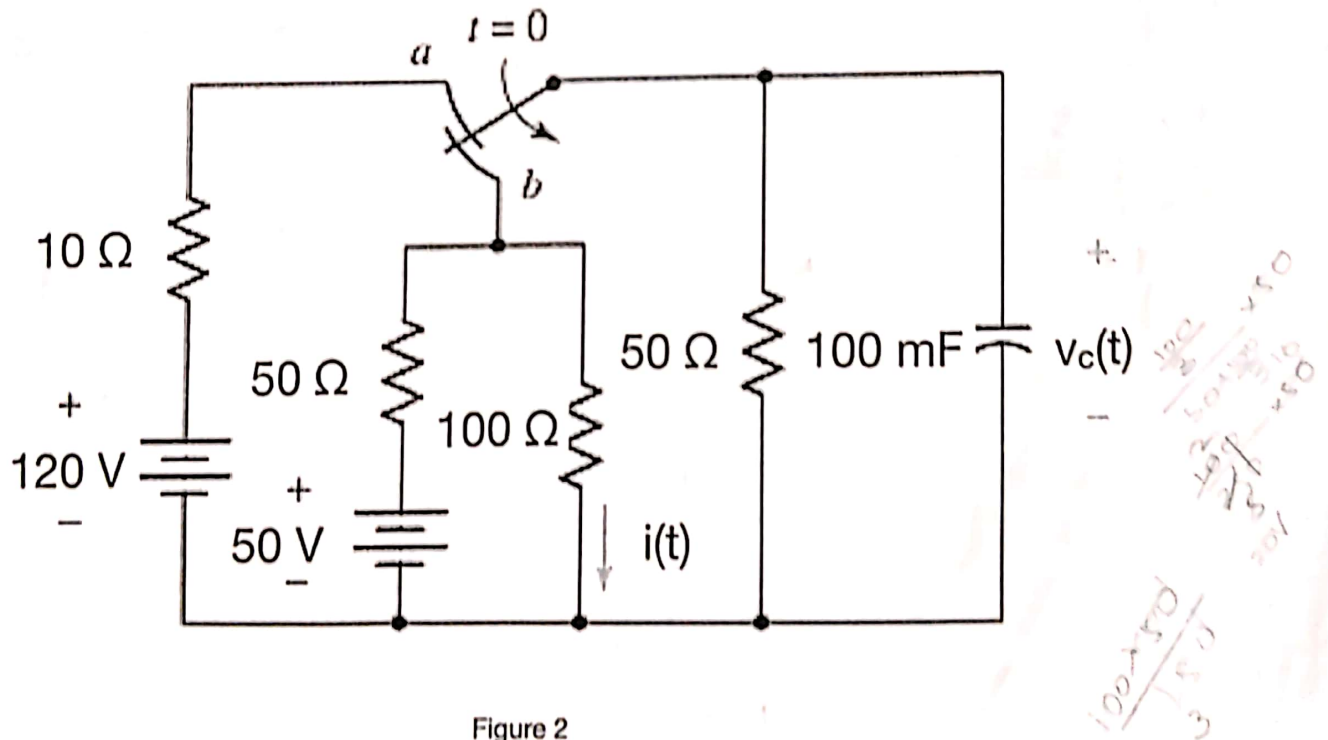


Figure 2

2. For figure 2, find the  
 (a) time constant of the circuit given; [10]  
 (b) find  $i(t)$  (current through  $100\ \Omega$ ); Identify the natural & forced response. [25]

3. For circuit in figure 3,  
 Find  $\alpha$  (alpha) [5],  $\omega_0$  [5],  $i(t)$  [25]

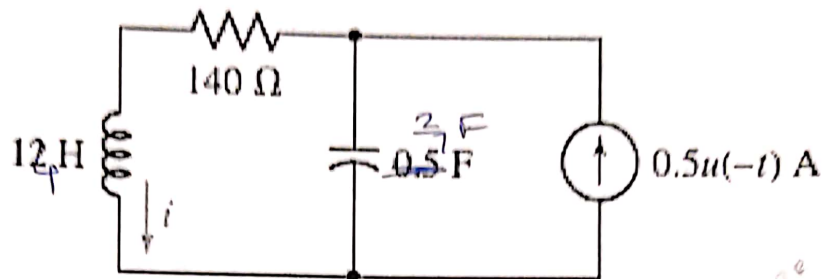


Figure 3