

- ✓ No washroom breaks. Phones must be turned off. Using/carrying any notes during the exam is not allowed.
- ✓ At the end of the exam, the **exam script** must be returned to the invigilator.
- ✓ Marks allotted for each question are mentioned beside each question.
- ✓ Write your answers inside the indicated boxes (where applicable). If you run out of room for an answer, please continue on the back of the page".
- ✓ Symbols have their usual meanings.

Question 1:

10 Marks

The two lines L_1 and L_2 signify the two loops in the adjacent circuit. Let input voltage $V_{IN} = 4.0$ V.

- i. Write the two loop equations along L_1 and L_2 using the quantities I_1 , I_2 and $I_1 + I_2$.
- ii. Solve the two loop equations to find I_1 and I_2 .
- iii. Find V_{OUT} .

