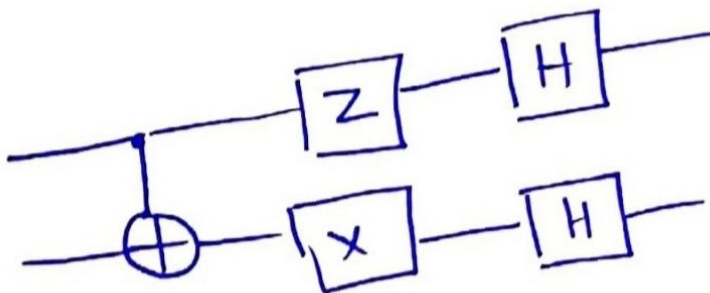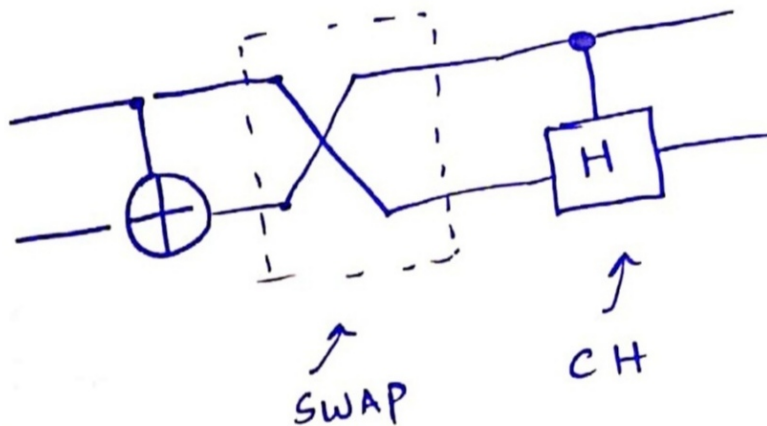- What will be the output of the following circuit, given its input is $|10\rangle$? Please show output of each stage separately. [5 Marks]

- Create unitary matrix of the whole circuit. [5 Marks]

- What will be the result of $H^{\otimes 3}(|111\rangle + |101\rangle + |100\rangle)$ [5 Marks]

- What will be the output of the following circuit, given its input is $|01\rangle$? Please show output of each stage separately. [5 Marks]
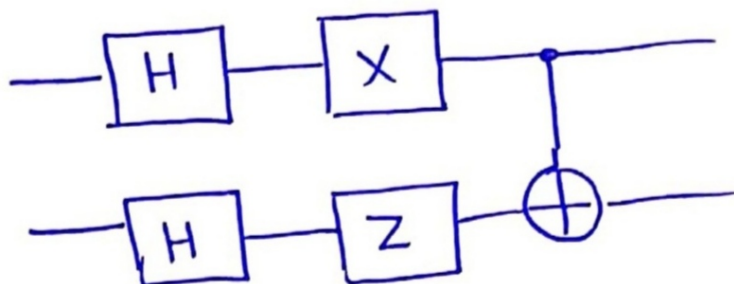

- Create unitary matrix of the whole circuit. [5 Marks]

- What will be the result of $H^{\otimes 3}(|111\rangle + |100\rangle + |110\rangle)$ [5 Marks]

- What will be the output of the following circuit, given its input is $|11\rangle$? Please show output of each stage separately. [5 Marks]
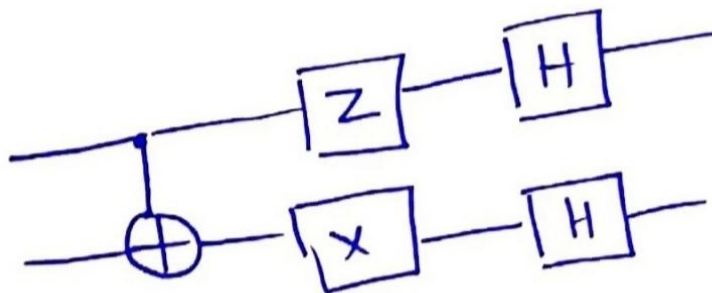

- Create unitary matrix of the whole circuit. [5 Marks]

- What will be the result of $H^{\otimes 3}(|000\rangle + |101\rangle + |110\rangle)$ [5 Marks]

- What will be the output of the following circuit, given its input is $|11\rangle$?
  Please show output of each stage separately. [5 Marks]

- Create unitary matrix of the whole circuit. [5 Marks]

- What will be the result of $H^{\otimes 3}(|111\rangle + |100\rangle + |110\rangle)$ [5 Marks]