

Part A (5 marks)

-
- Diagram illustrating the decomposition of a 3-qubit gate into two 2-qubit gates:
- Gate (a): CNOT with control on the first qubit and target on the second qubit.
 - Gate (b): CNOT with control on the second qubit and target on the third qubit.
 - Gate (c): CNOT with control on the first qubit and target on the third qubit.
 - Gate (d): CNOT with control on the second qubit and target on the third qubit.
 - Gate (e): CNOT with control on the first qubit and target on the second qubit.

(a (b . c) (d . e))

- Draw the machine level representation of the following s-expression.

Answer:

