

10.A.2

What are the air standard assumptions? (multiple correct answers)

Answer: Neglect fuel and assume the working fluid to be pure air, Combustion is replaced by a heat transfer process in which heat is added and All the processes are internally irreversible.

Explanation: The working fluid is air, which continuously circulates in a closed loop and always behaves as an ideal gas. All the processes that make up the cycle are internally reversible. The combustion process is replaced by a heat-addition process from an external source. Assuming constant specific heats at room temperature ($25C^\circ$) for air is the only difference between air standard assumptions and cold-air assumptions. So it is not part of the air-standard assumptions. Extra: the exhaust is replaced by a heat-rejection process that restores the working fluid to its initial state.