

Problem 1: How will you describe the internal energy of a hot cup of coffee? What about a glass of cold water?

Problem 2: Find the change in internal energy when 3500 J of work is done on the system and 1500 J of heat is added to the system.

Problem 3: Suppose you have three blocks (A, B, and C). Block A is in thermal equilibrium with block B, and block B is in thermal equilibrium with block C. How is block A related to block C?

Problem 4: In mechanics, we have discussed the law of conservation of energy. How is this different from the first law of thermodynamics?

Problem 5: Explain using the concept of the second law of thermodynamics how beneficial it would be for you to take your periodical examinations on the specified day instead of moving it to another day. Assume that you have studied very well, and you are well-prepared for the examination day.