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The mathematical setting of many problems of search for the optimum form or properties of materials in constructions is reduced to the problem of optimal control of the processes occurring in continuous media. In this connection the minimized functional (or the goal one) is determined as a result of solving the boundary problems for the partial differential equations called as a state equation. The natural generalization of such kind problems are the optimization problems in the presence of connections in the form of the operator equations. This work deals with the investigation of decidability of such problems and with the determination of the necessary conditions, characterizing their solution. For example, the notion of solving the equation with the non-restricted coefficients, using which the problem of control of the elliptical equation setting region, is reduced to the problem of control of lower coefficients. The optimality necessary condition in the form of the Pontryagin maximum with further application to the problem of control of lower coefficients, and hence, to the problems of control of the equation setting region, is being proved. (Received December 22, 2010)