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**MODIFIED UPWIND DIFFERENCE SCHEME FOR
TIME-DEPENDENT SINGULARLY PERTURBED
CONVECTION-DIFFUSION EQUATIONS ON SHISHKIN MESH**

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A numerical study is made to examine the singularly perturbed time dependent convection-diffusion equations on a rectangular domain. The solution of considered problem exhibits boundary layer behaviour on right side of the domain. Semidiscretize the continuous problem by means of backward Euler method in the time direction. The semi-discretization process yields a set of ordinary differential equations at each time level. These resulting set of ordinary differential equations are discretize by using modified upwind difference scheme on a non-uniform mesh of Shishkin type. The resulting finite difference method is shown to be almost of second order accurate in coarse mesh and almost of first order accurate in fine mesh in the spatial direction. First order accuracy is achieved in the temporal direction. An extensive amount of analysis has been carried out in order to obtain uniform convergence of the method. Finally, it is shown that the proposed method is converging uniformly with respect to the singular perturbation parameter *i.e.* – uniform. Some Numerical experiments have been carried out to validate the predicted theory.

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