

Scientific Computing Lab **MA – 322** **Lab – 14**

Name – Rasesh Srivastava

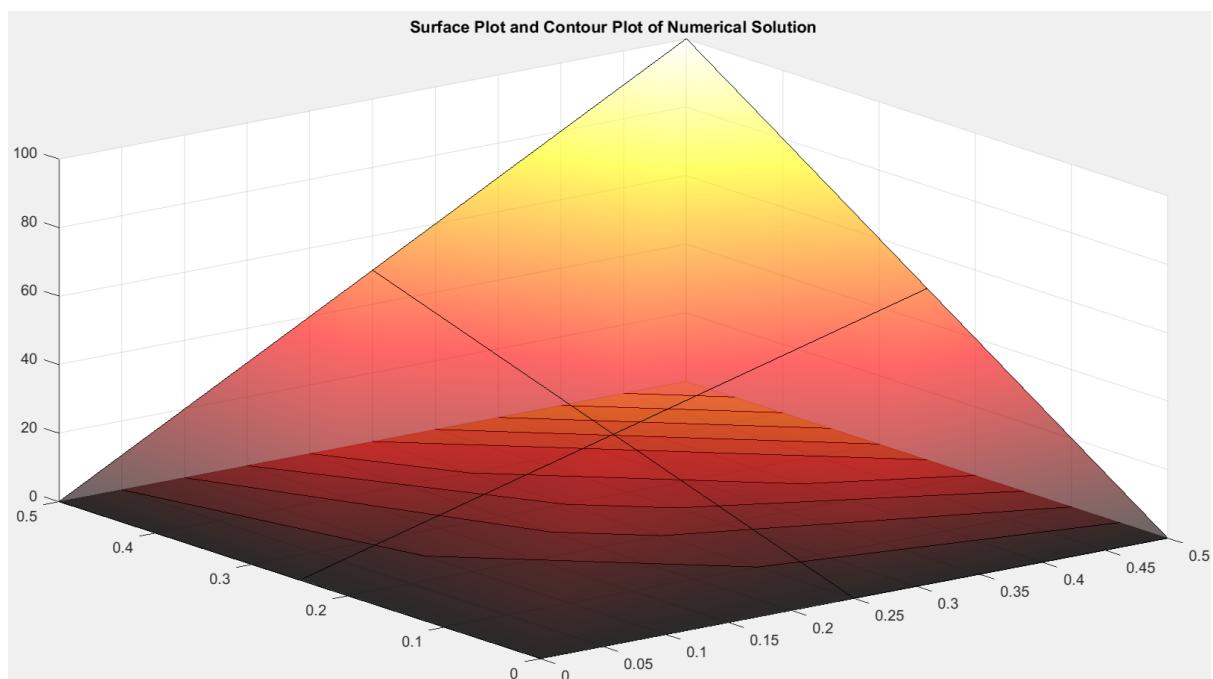
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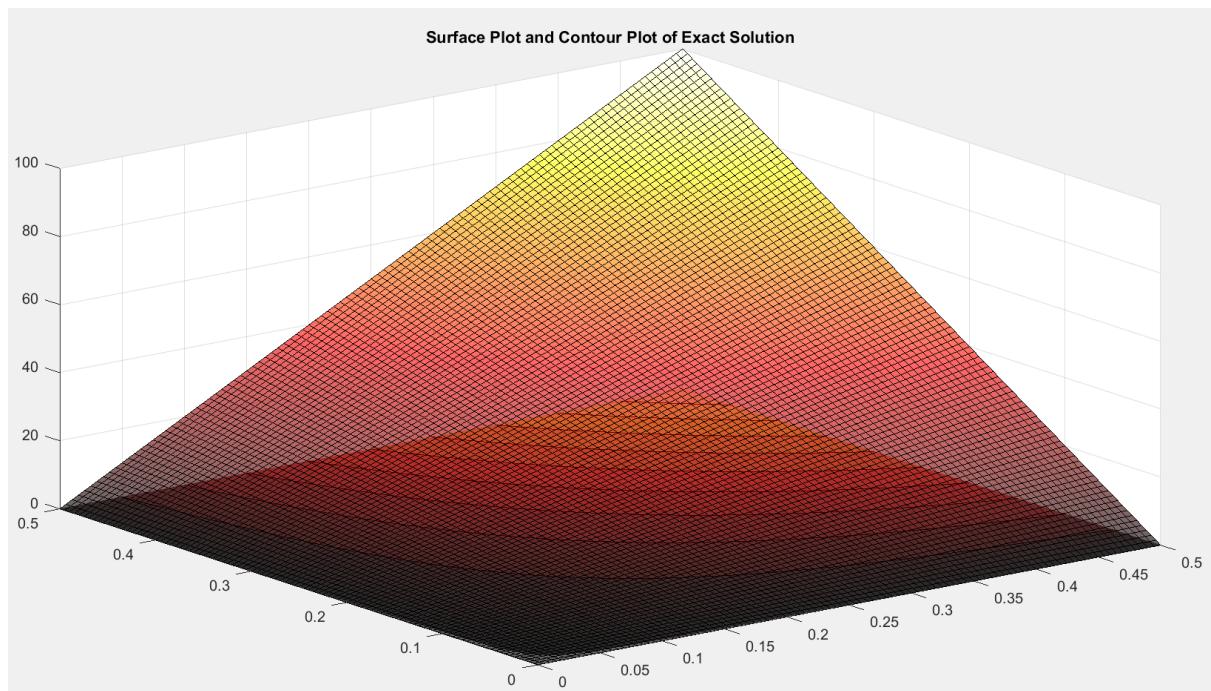
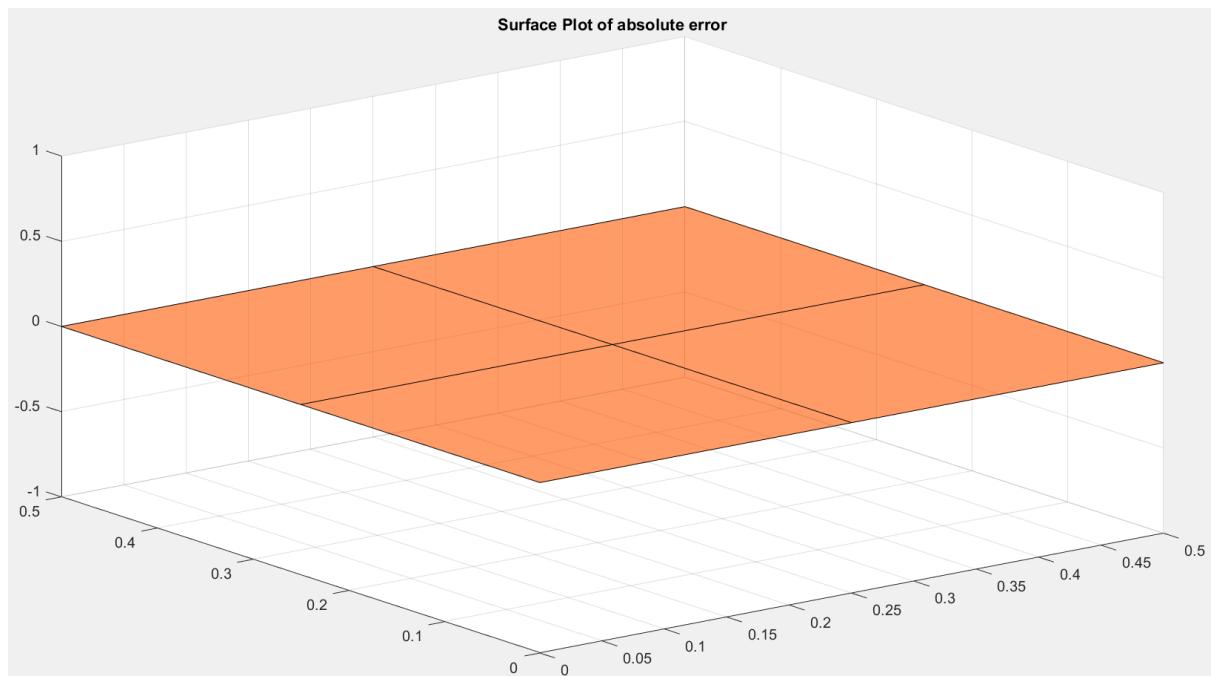
Branch – Mathematics and Computing

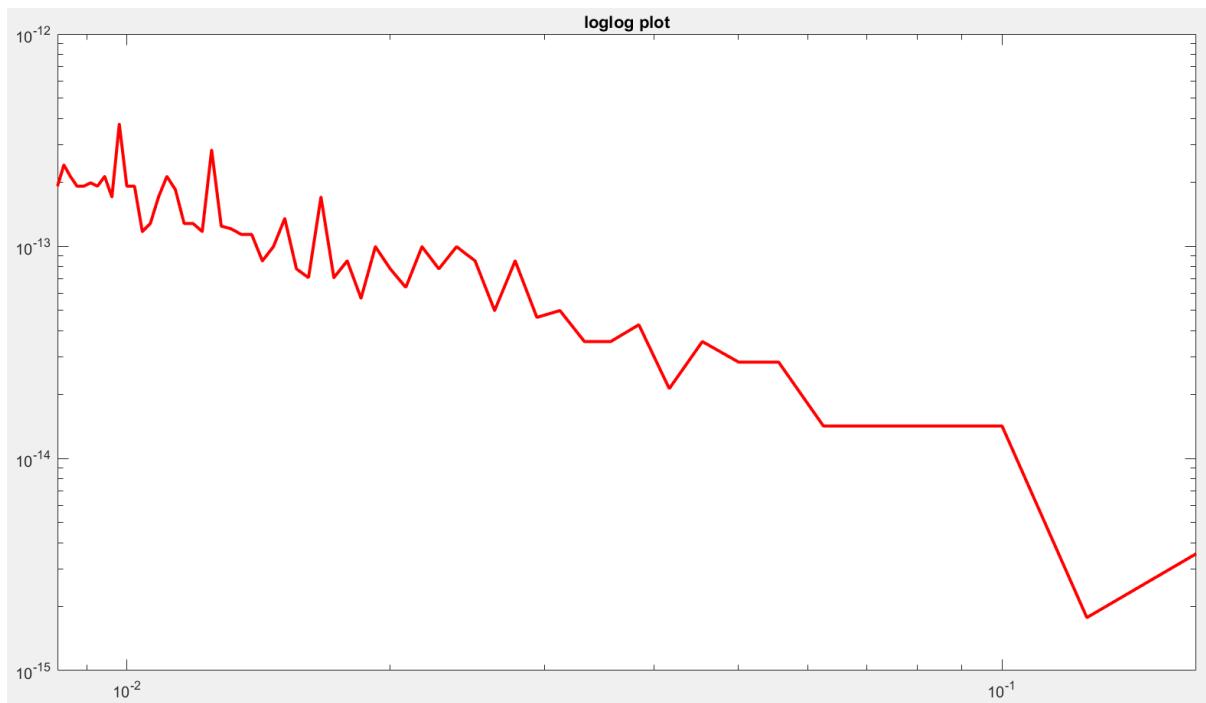
1)

a)

Using five-point stencil finite difference scheme,

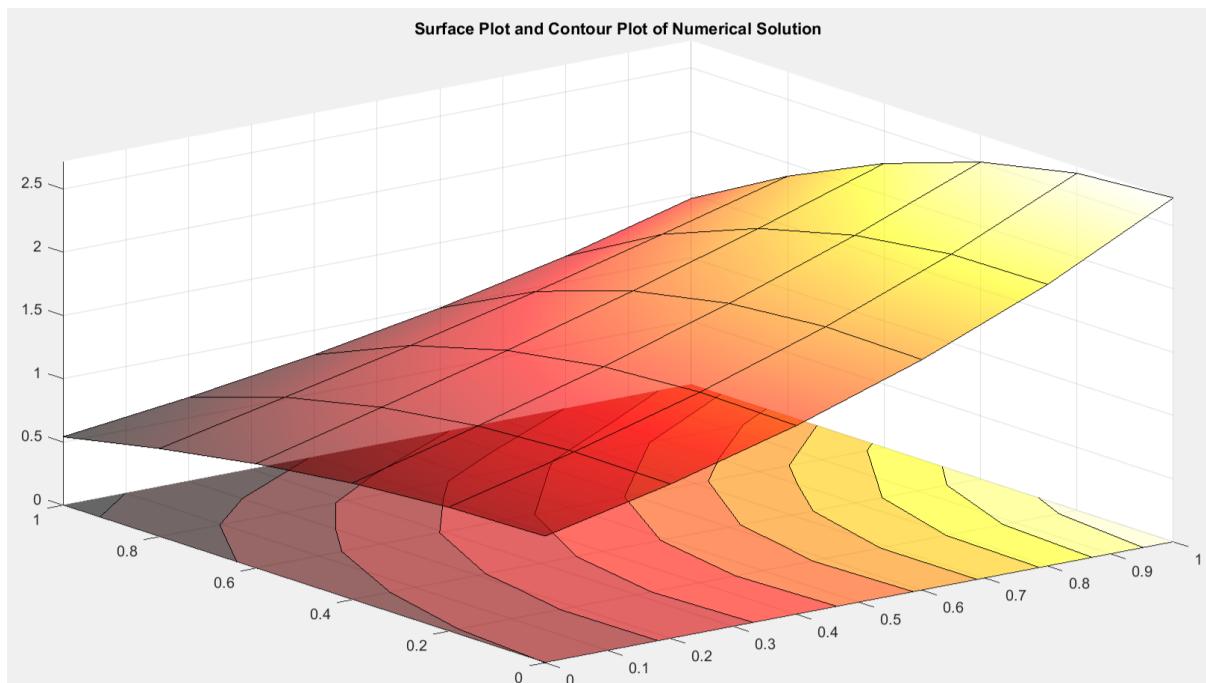


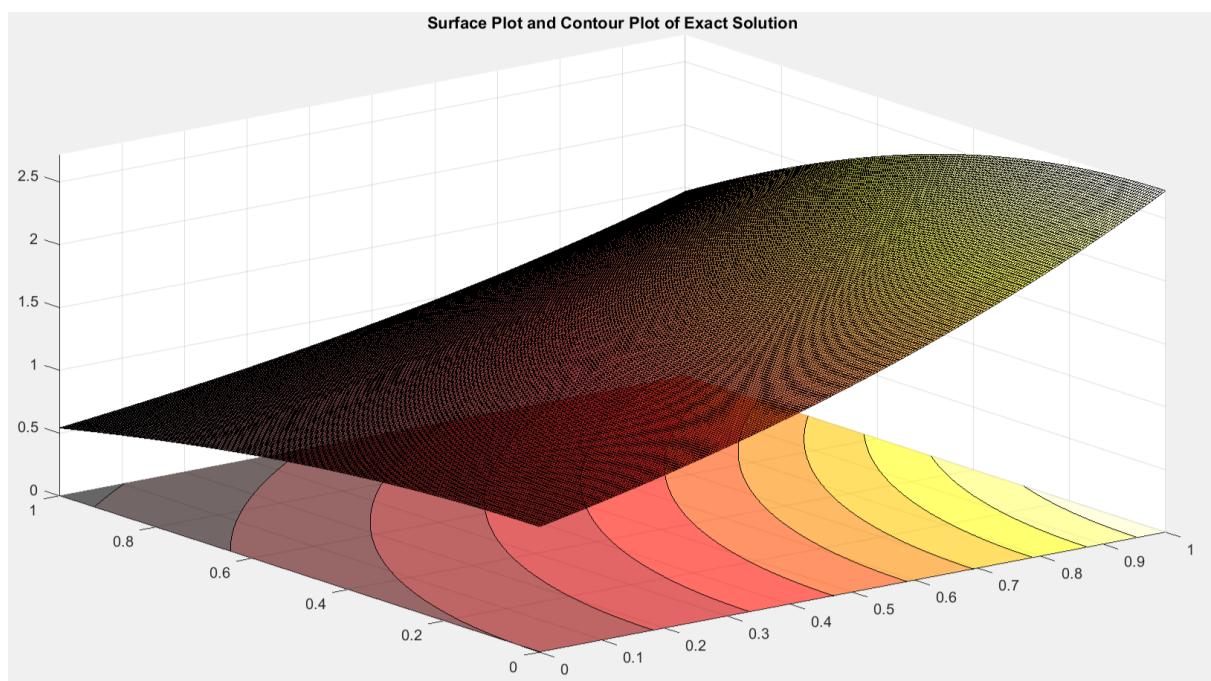
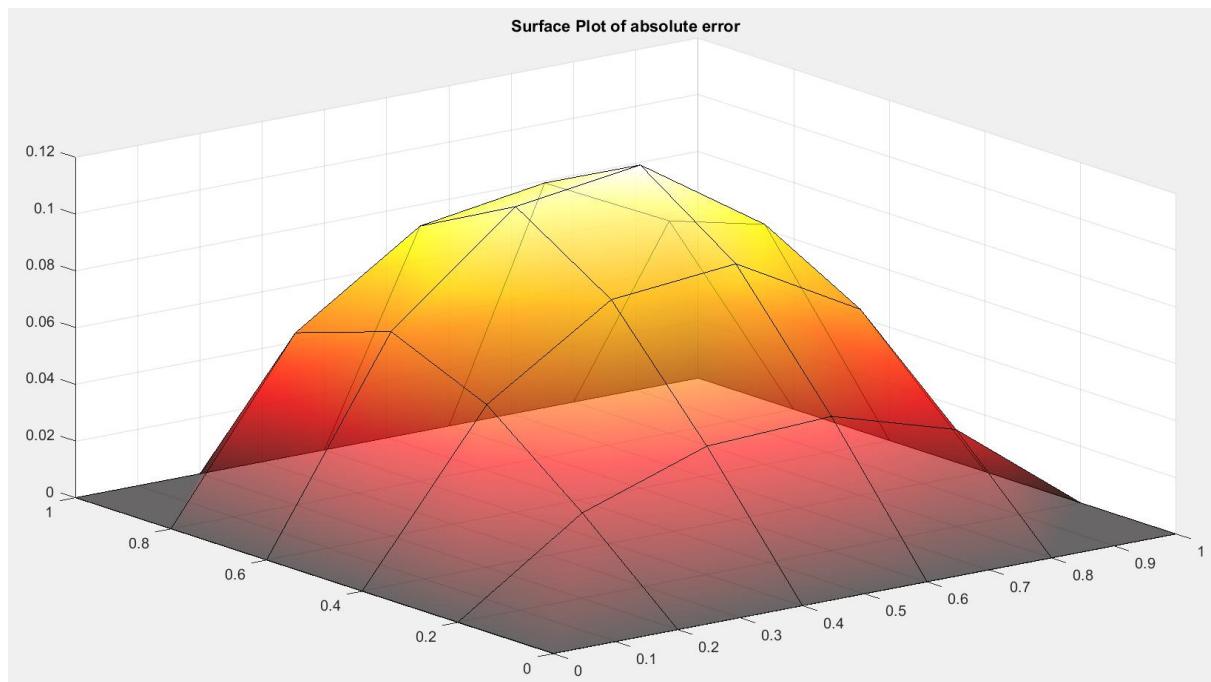


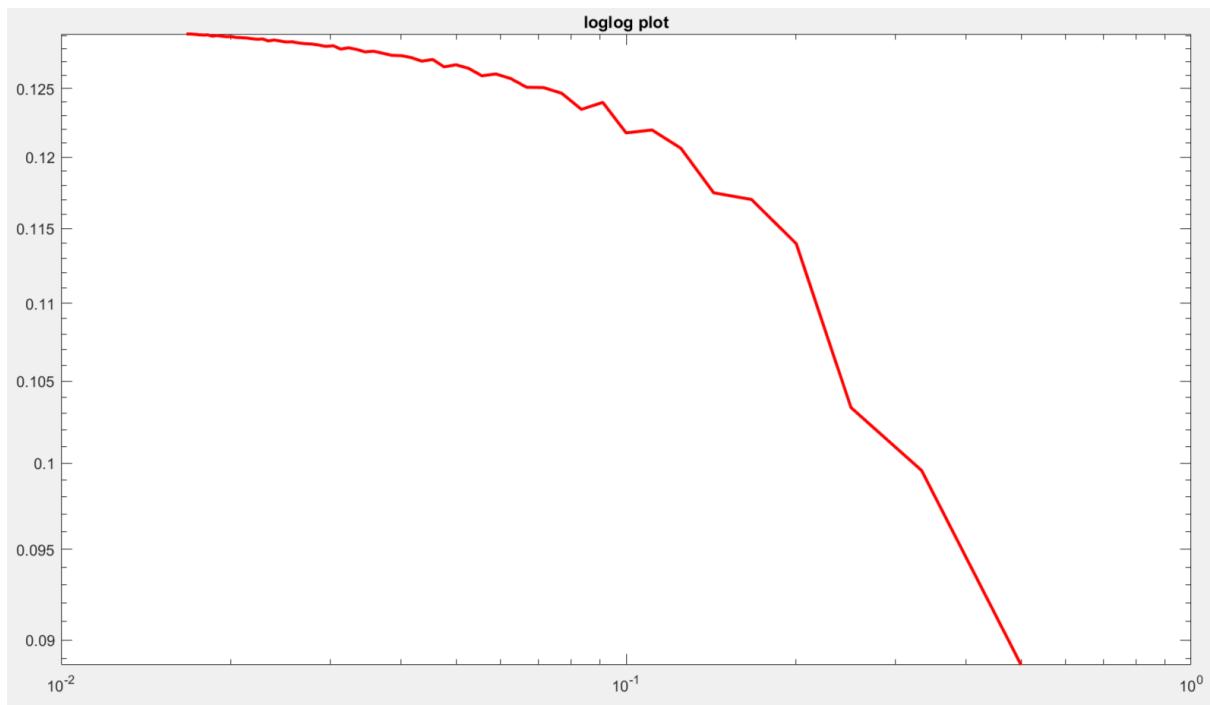


b)

Using five-point stencil finite difference scheme,



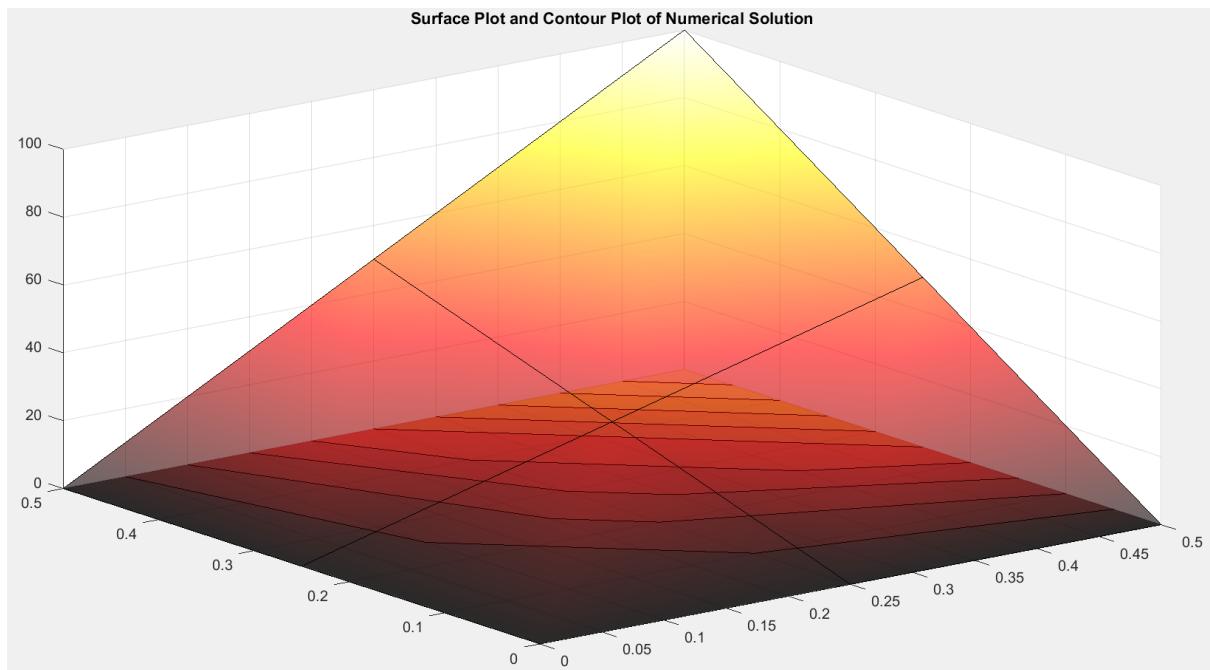


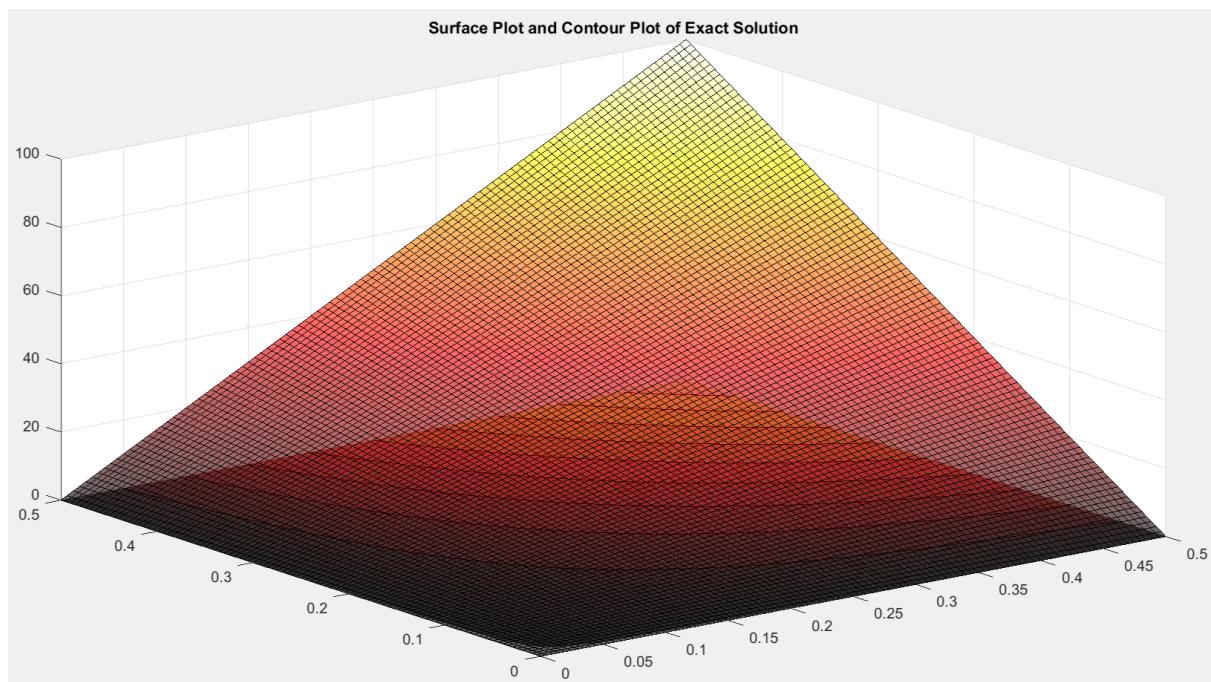
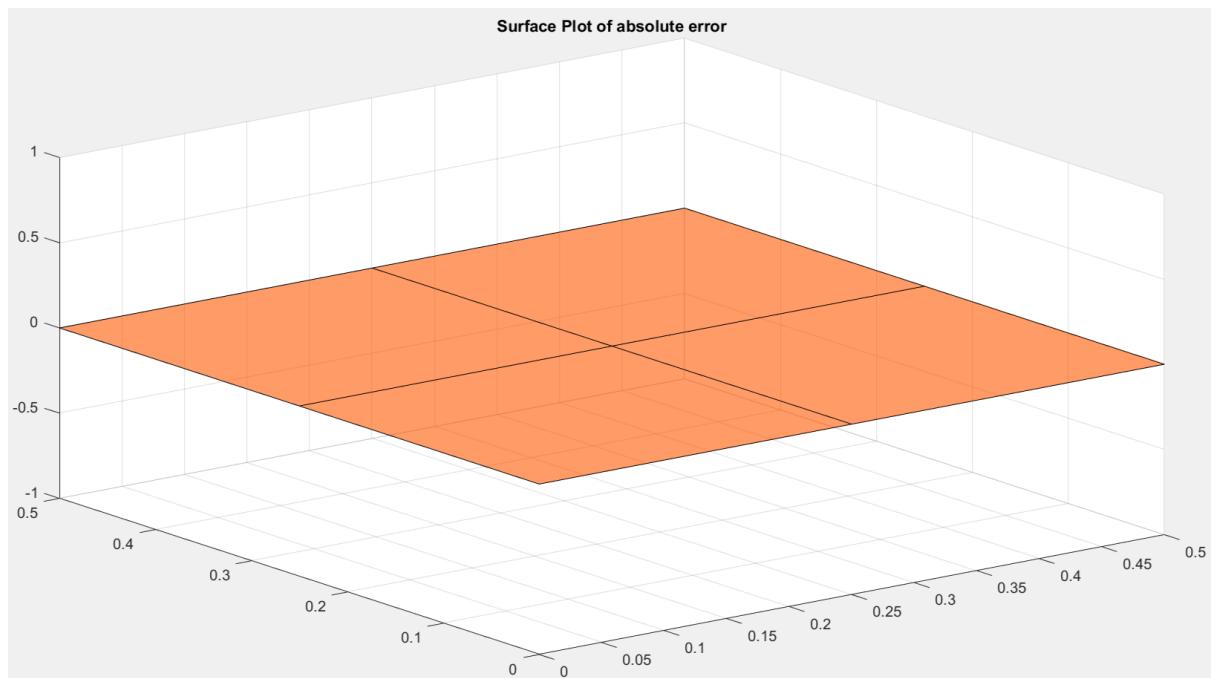


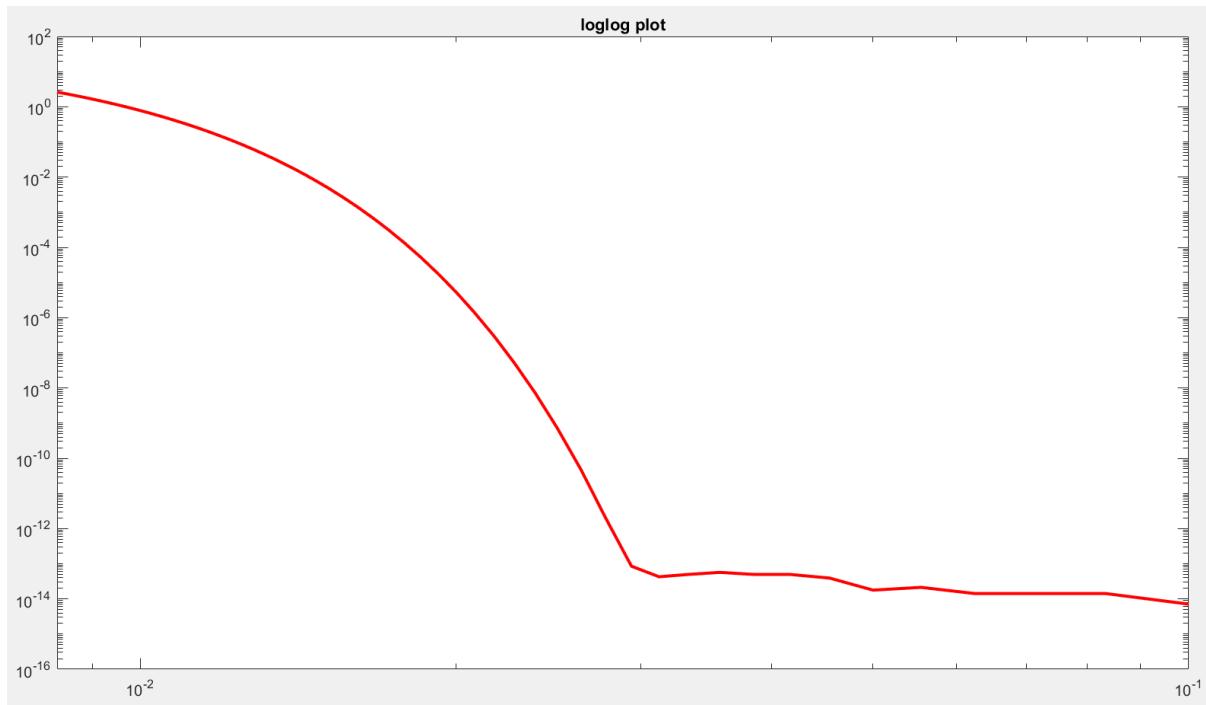
2)

a)

Using Gauss-Seidel iterative method,

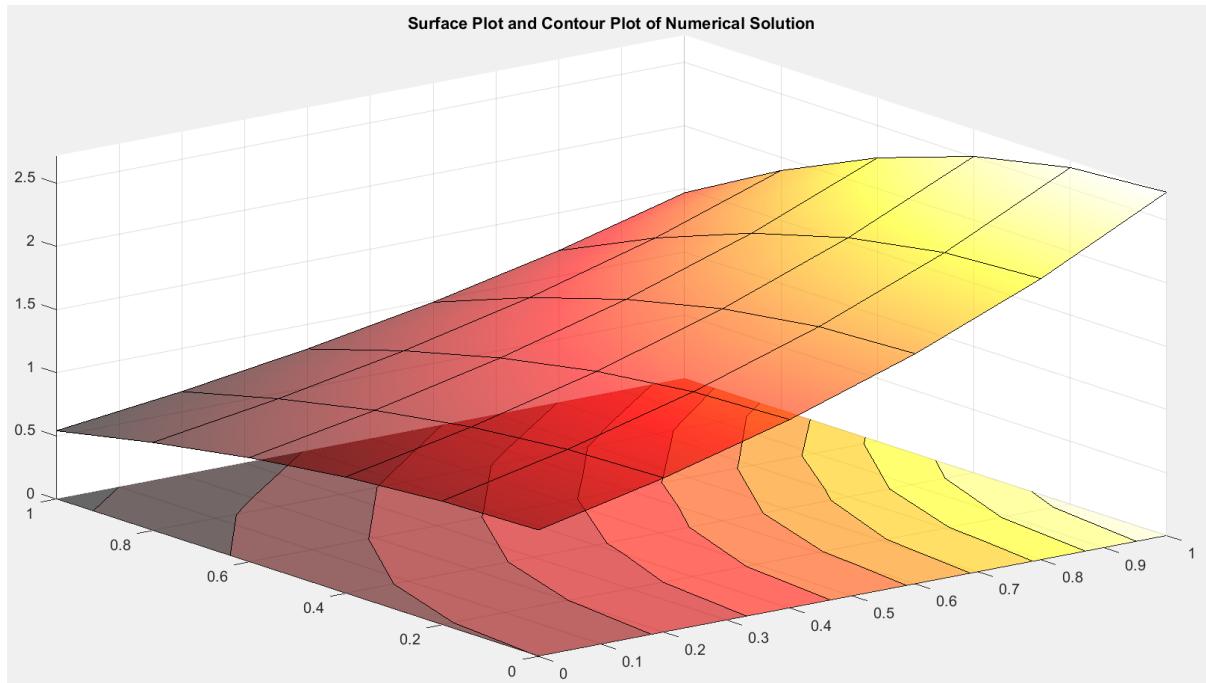


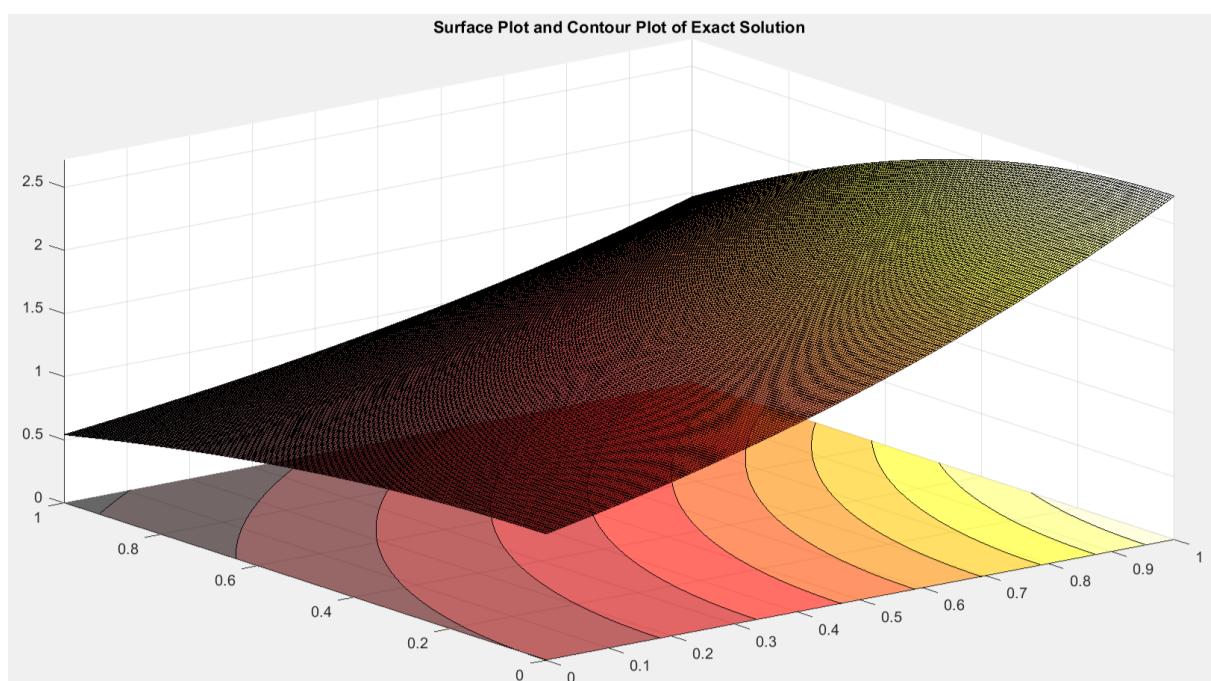
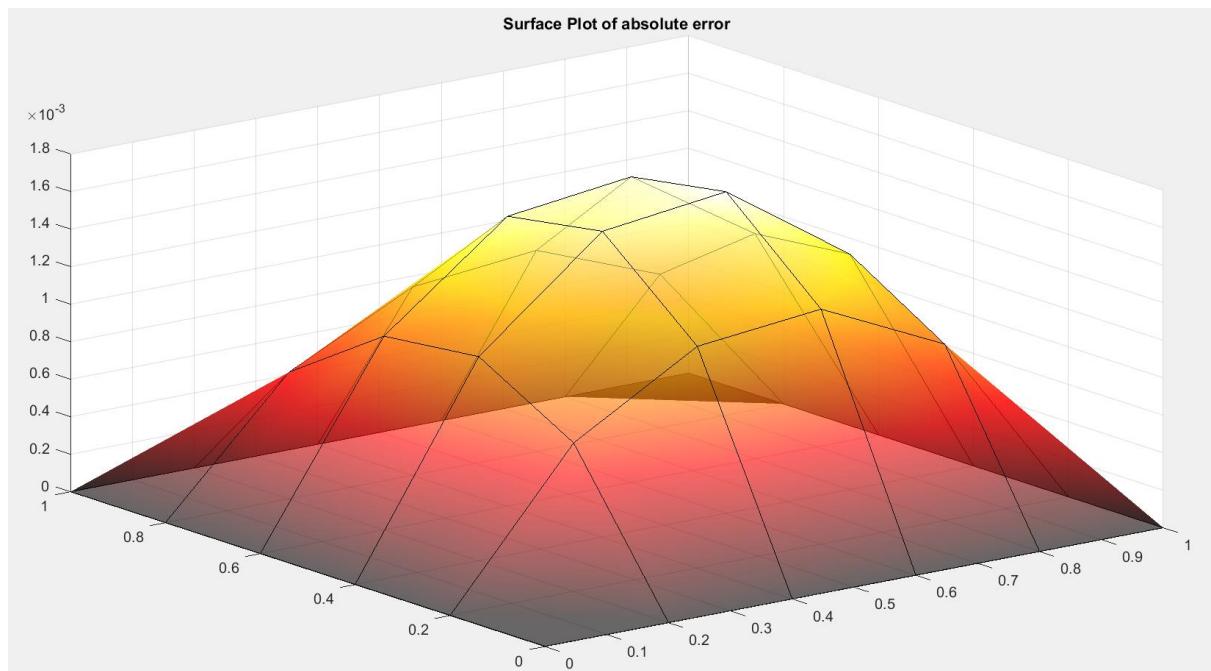


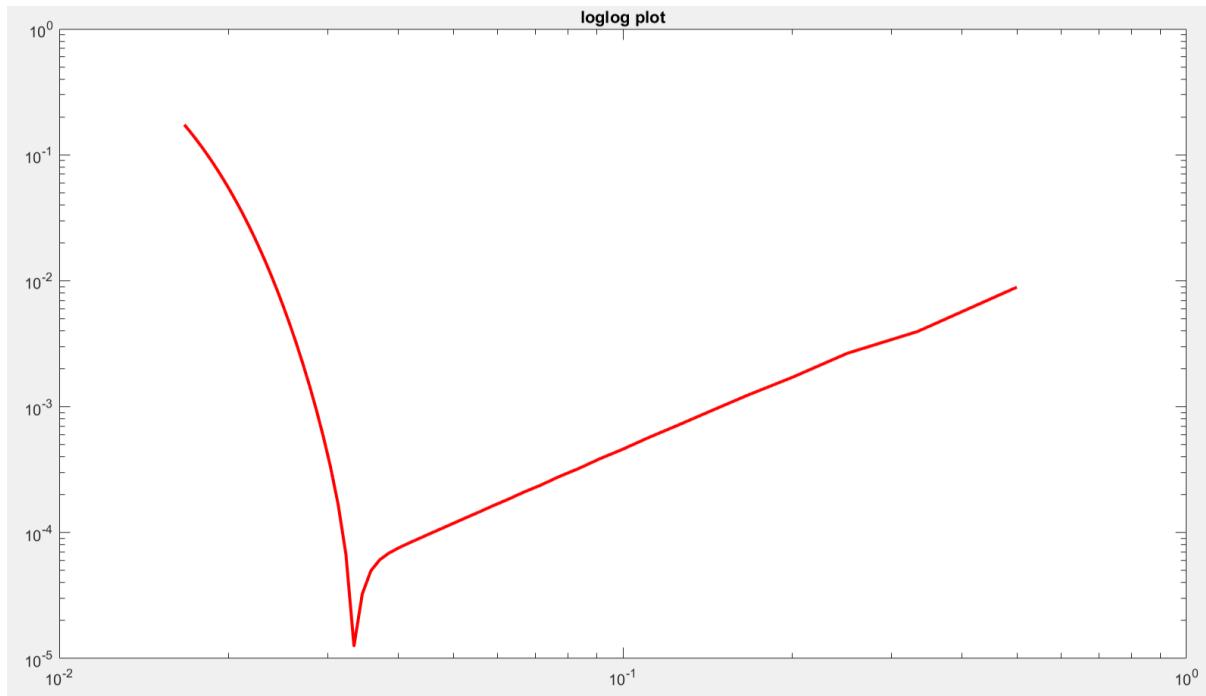


b)

Using Gauss-Seidel iterative method,



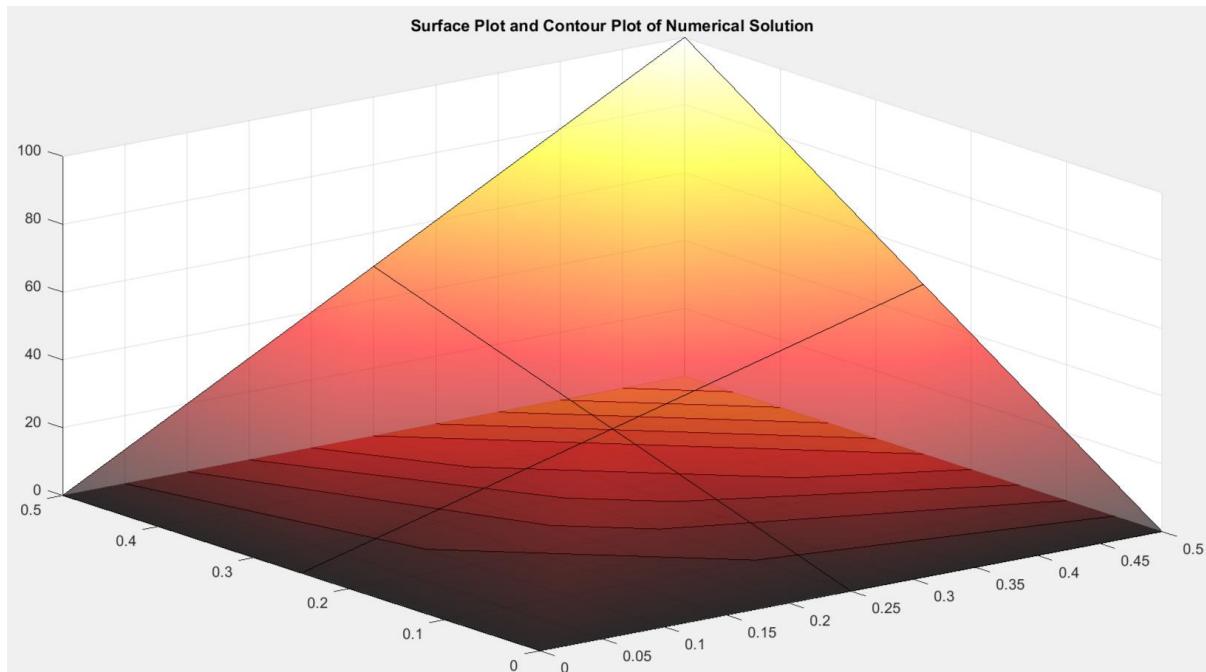


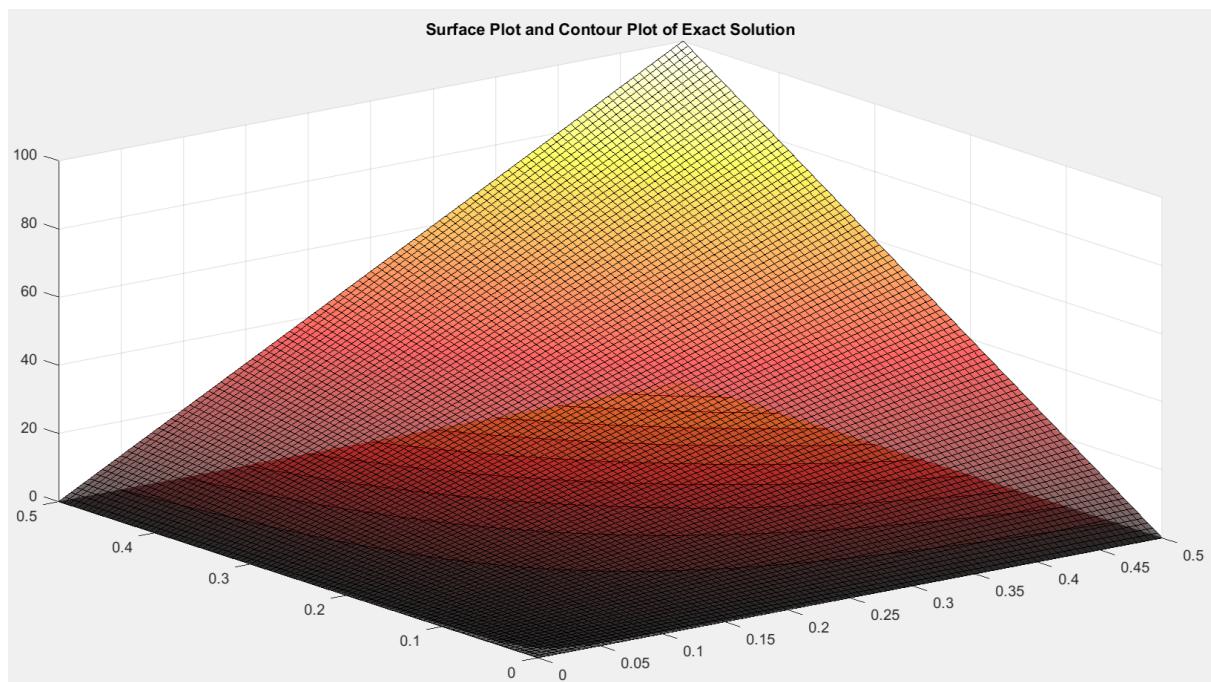
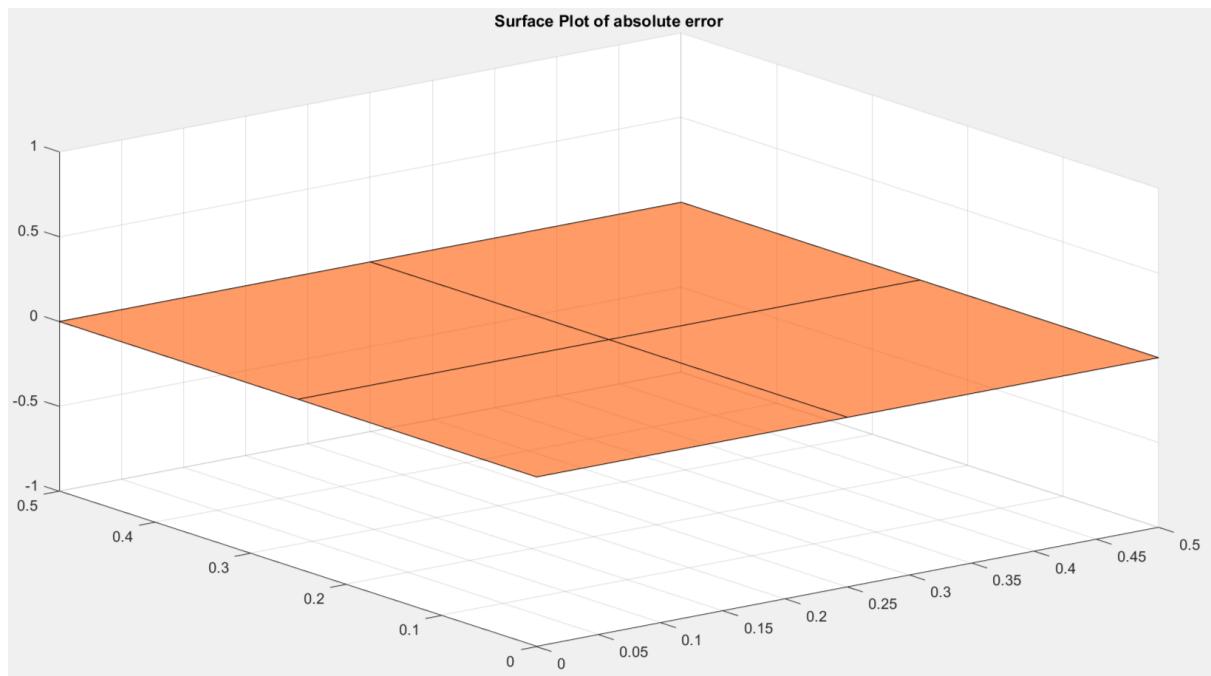


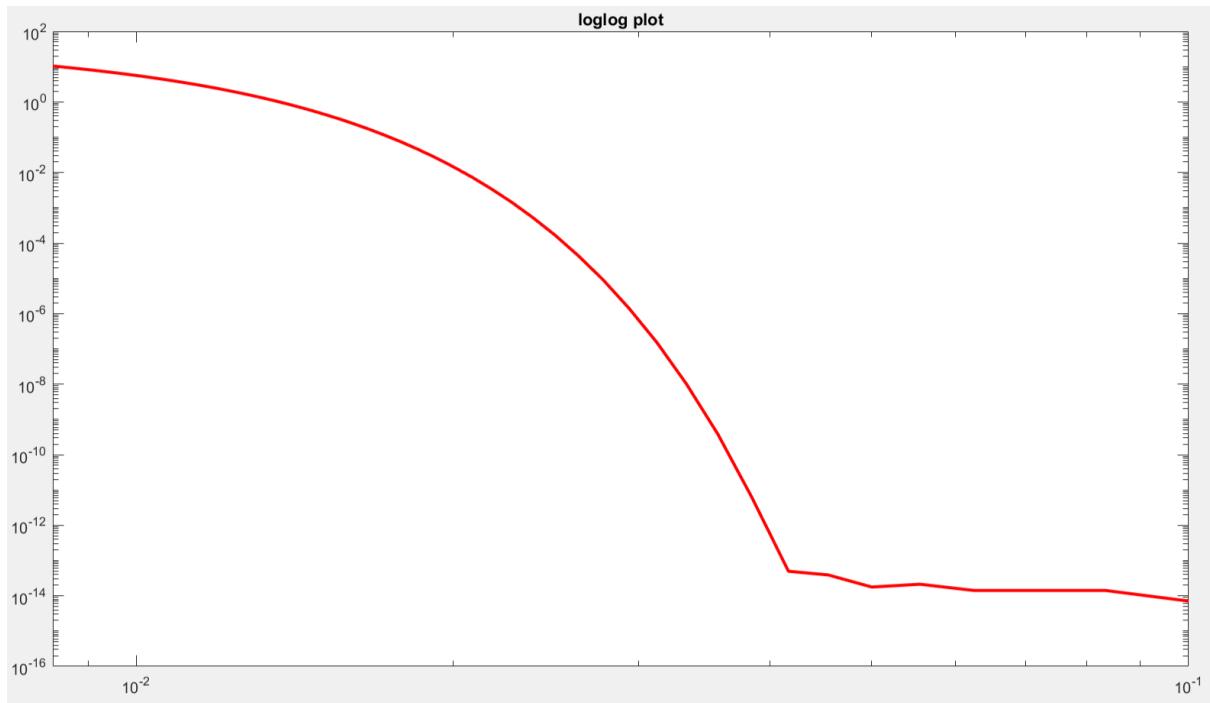
3)

a)

Using Jacobi iterative method,

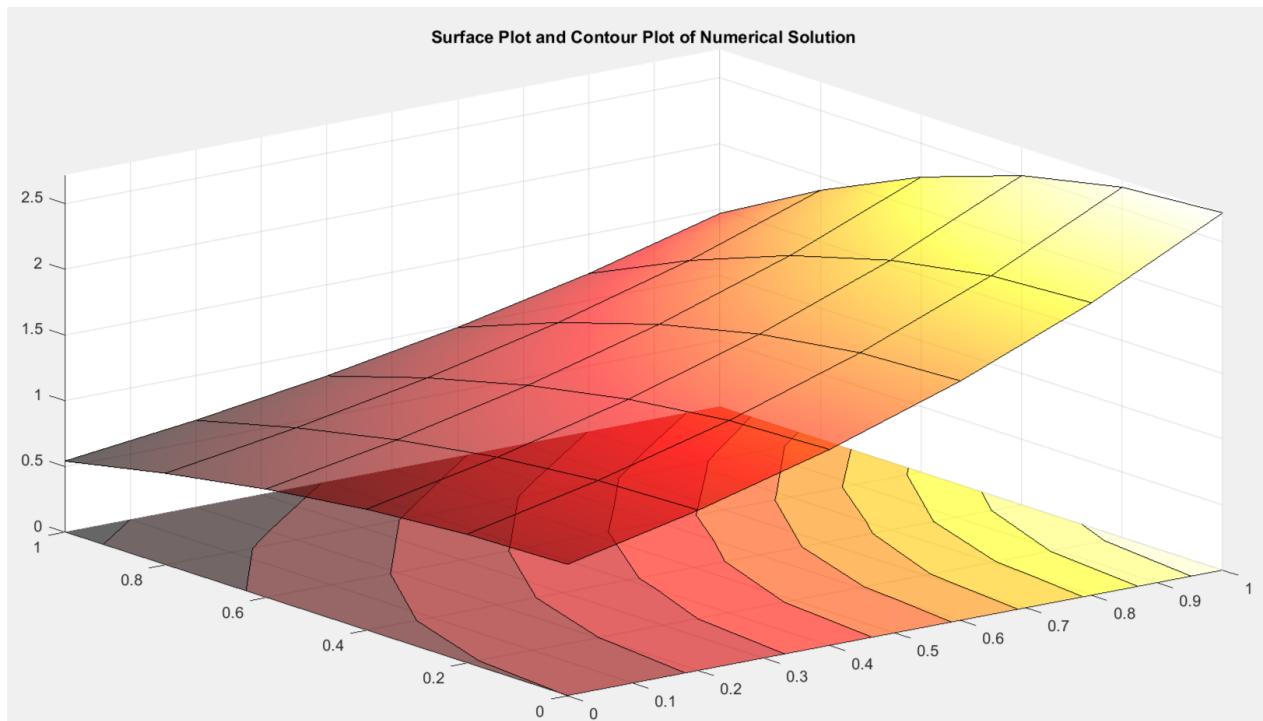


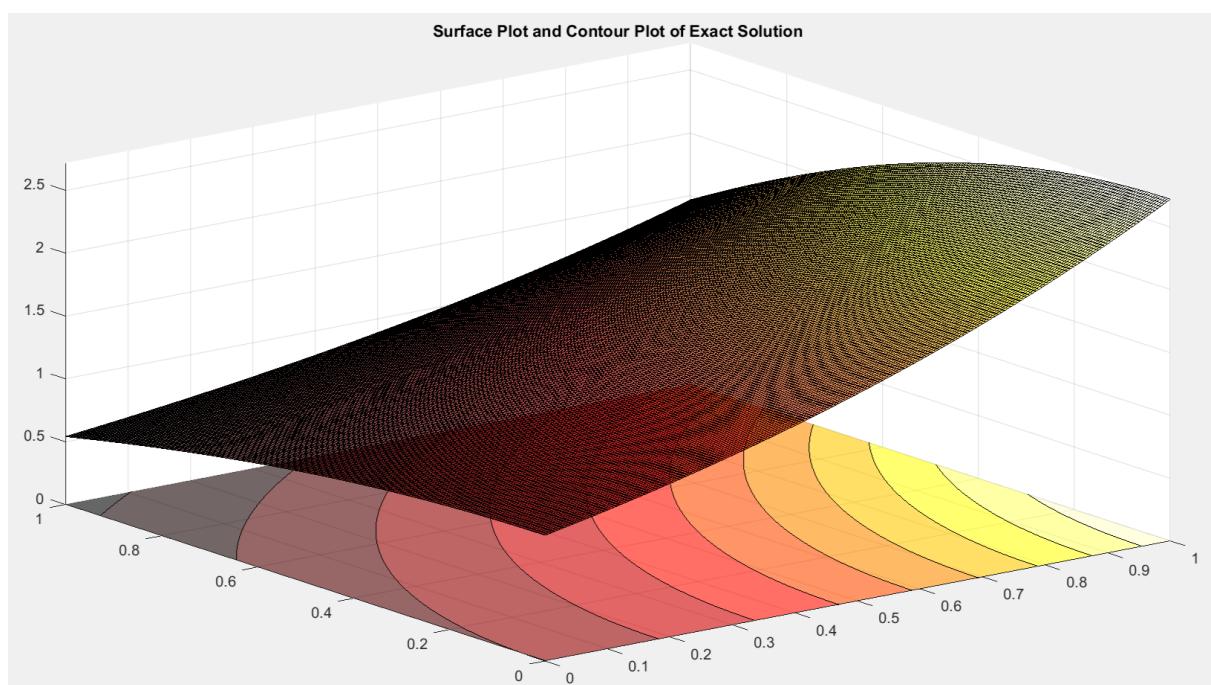
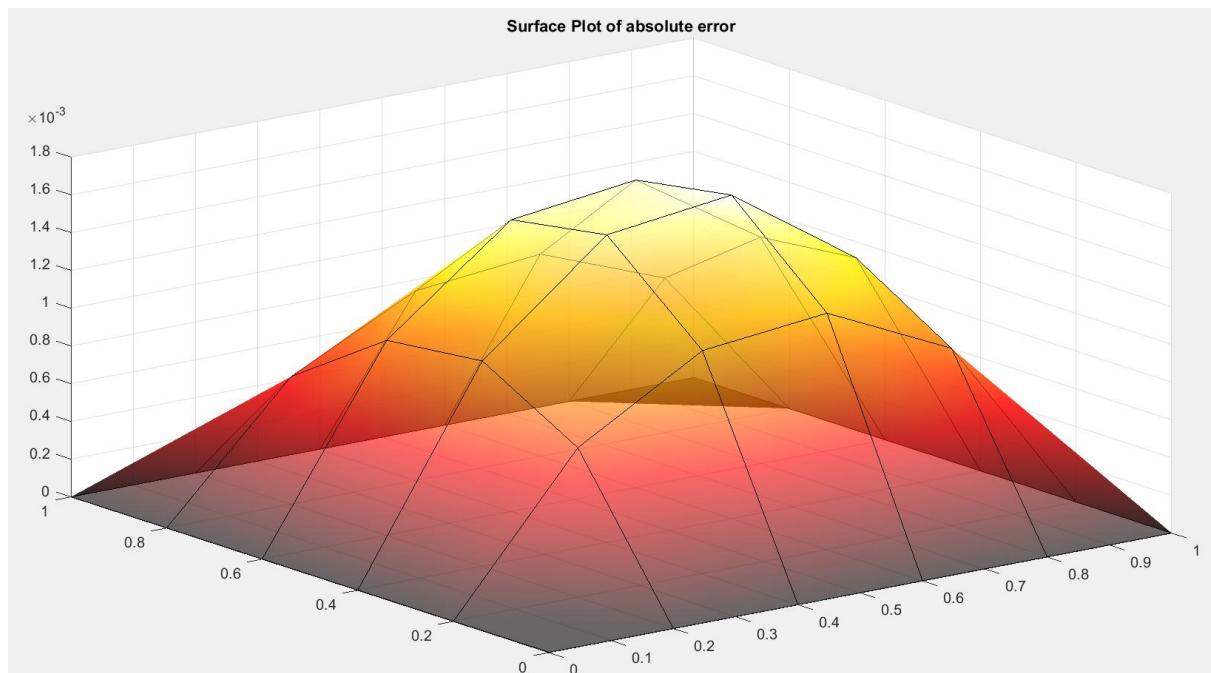


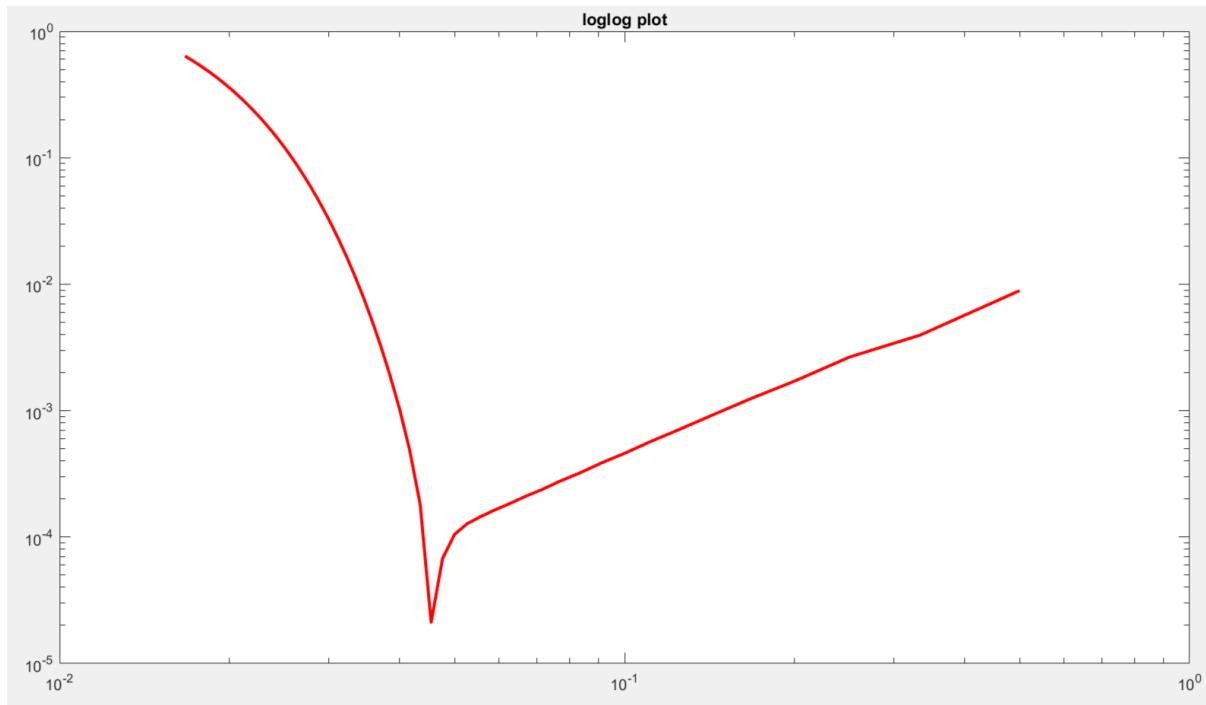


b)

Using Jacobi iterative method,



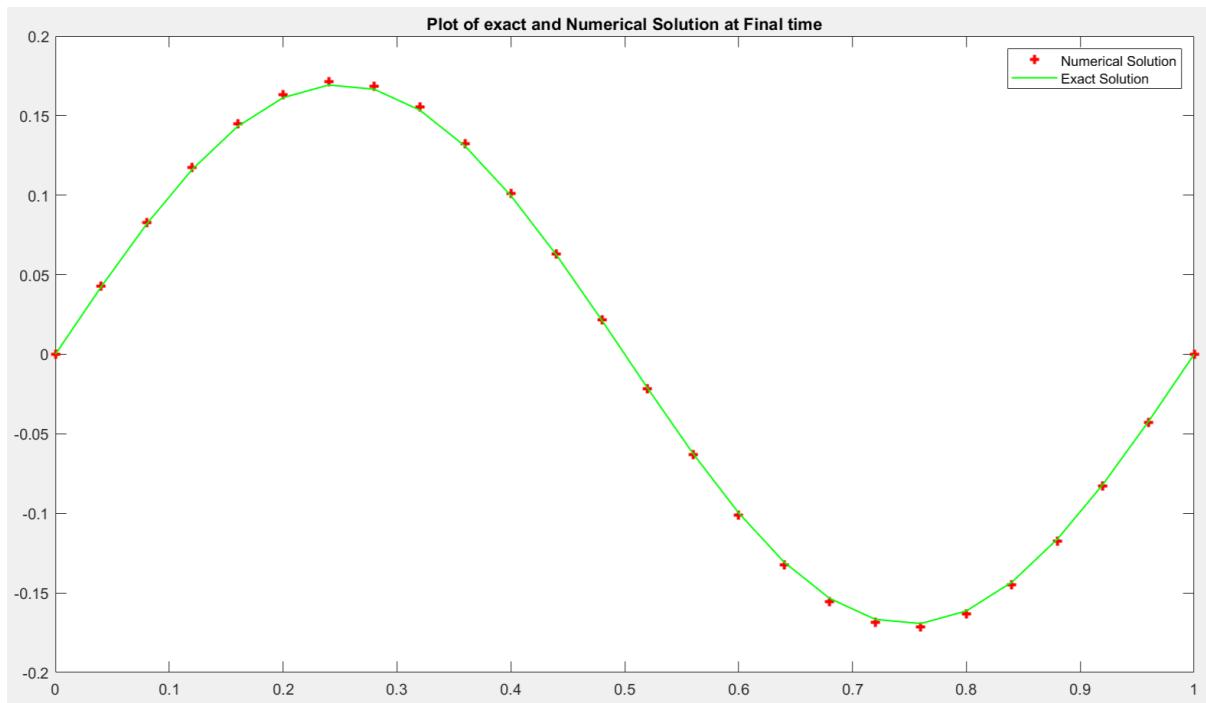


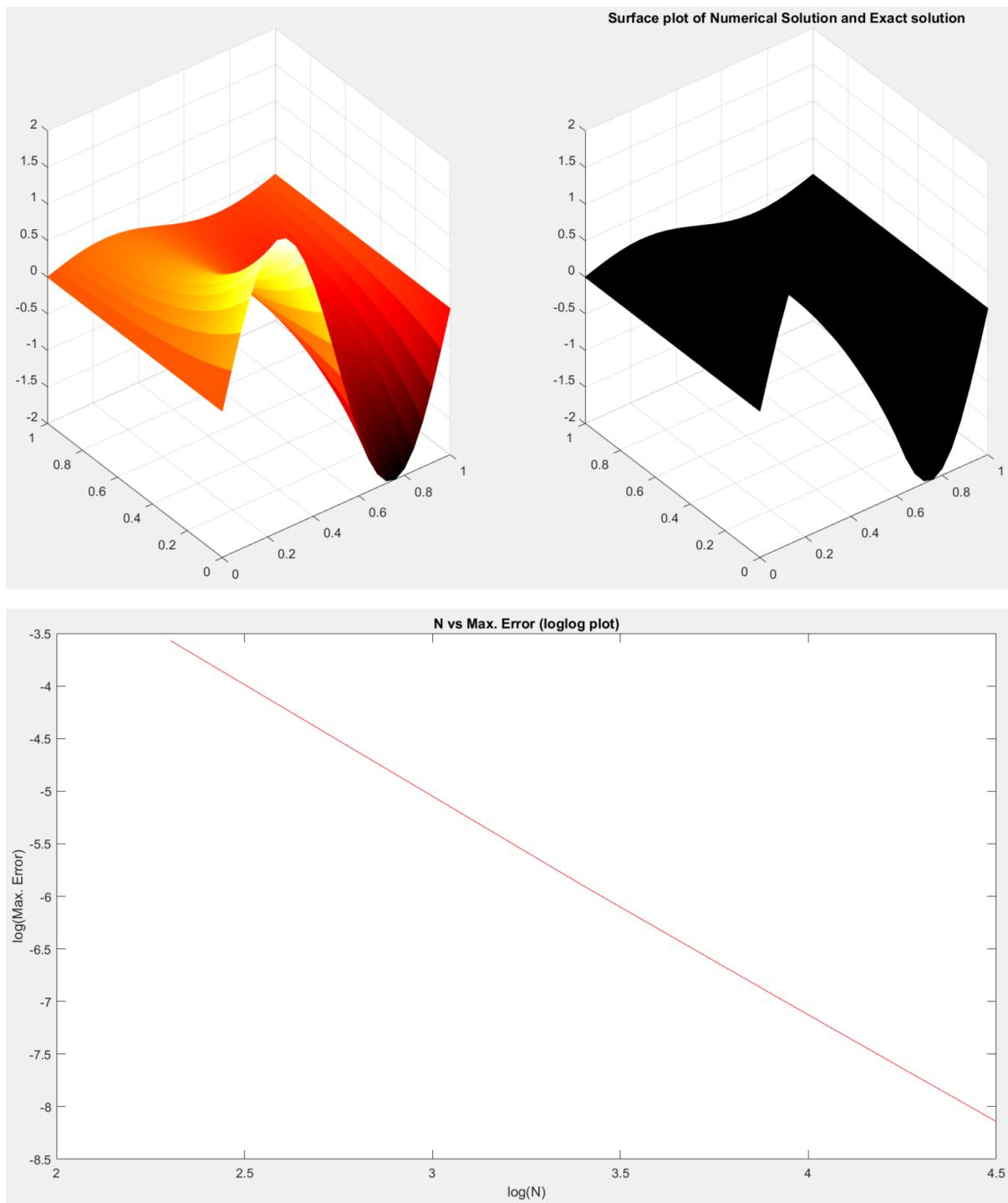


4)

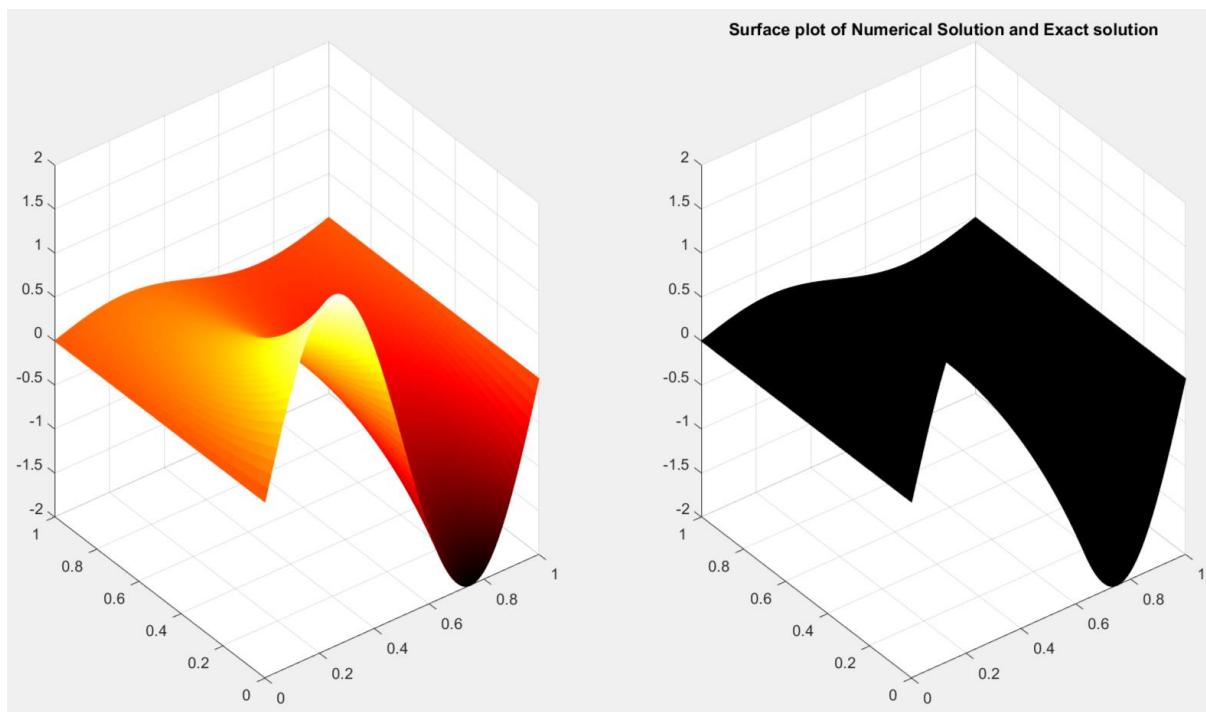
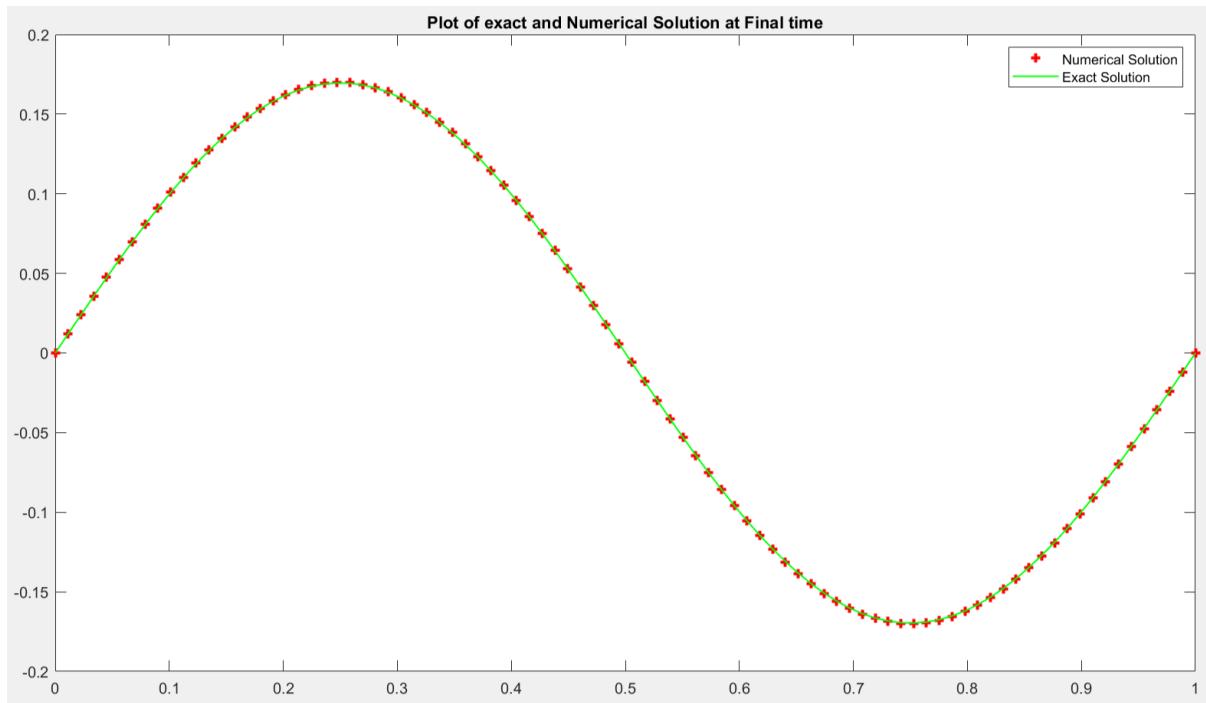
a)

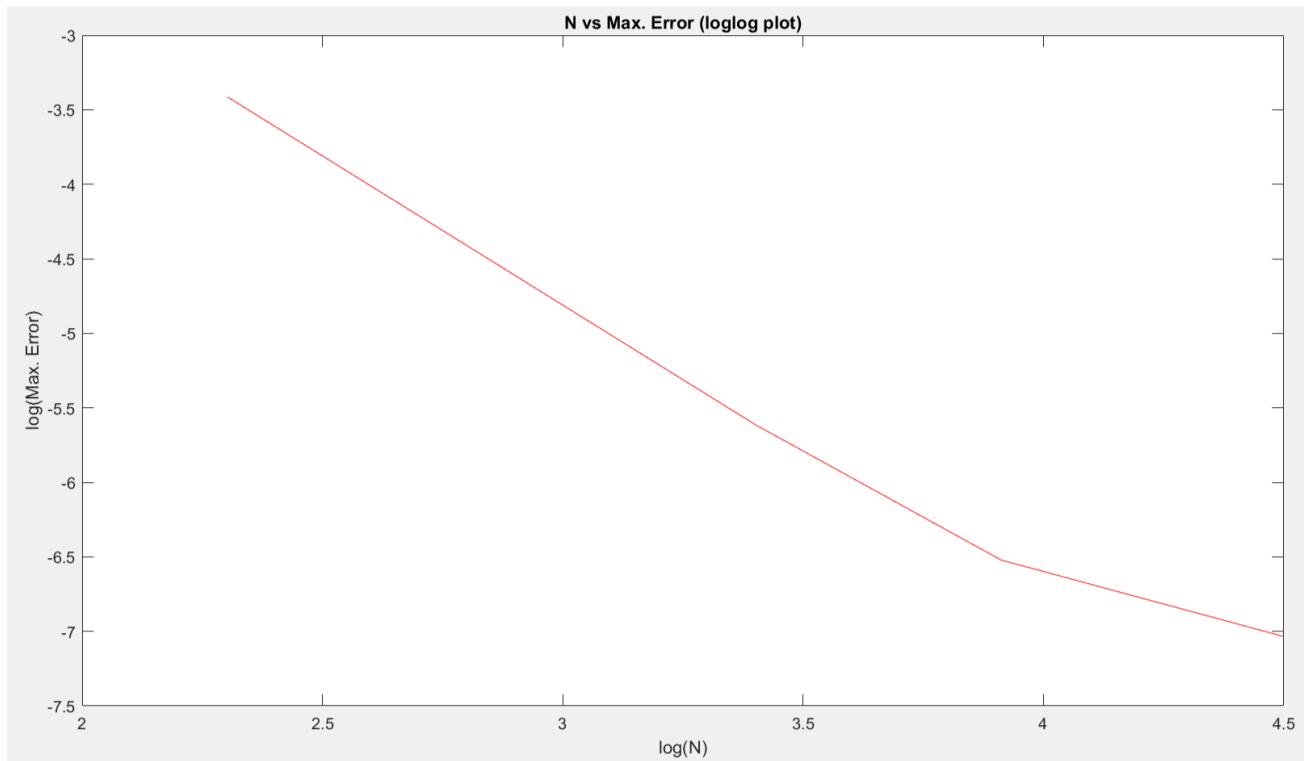
Using forward-time and central space (FTCS) discretization scheme,



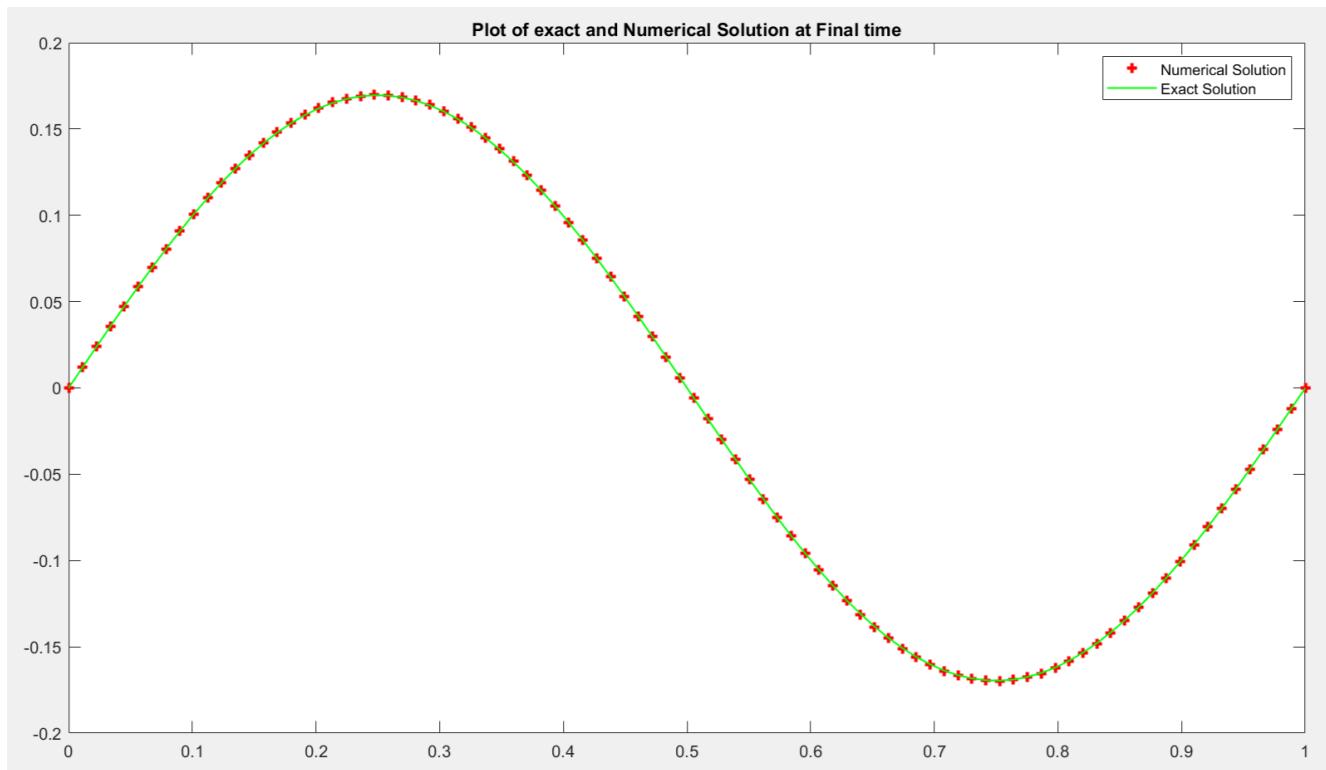


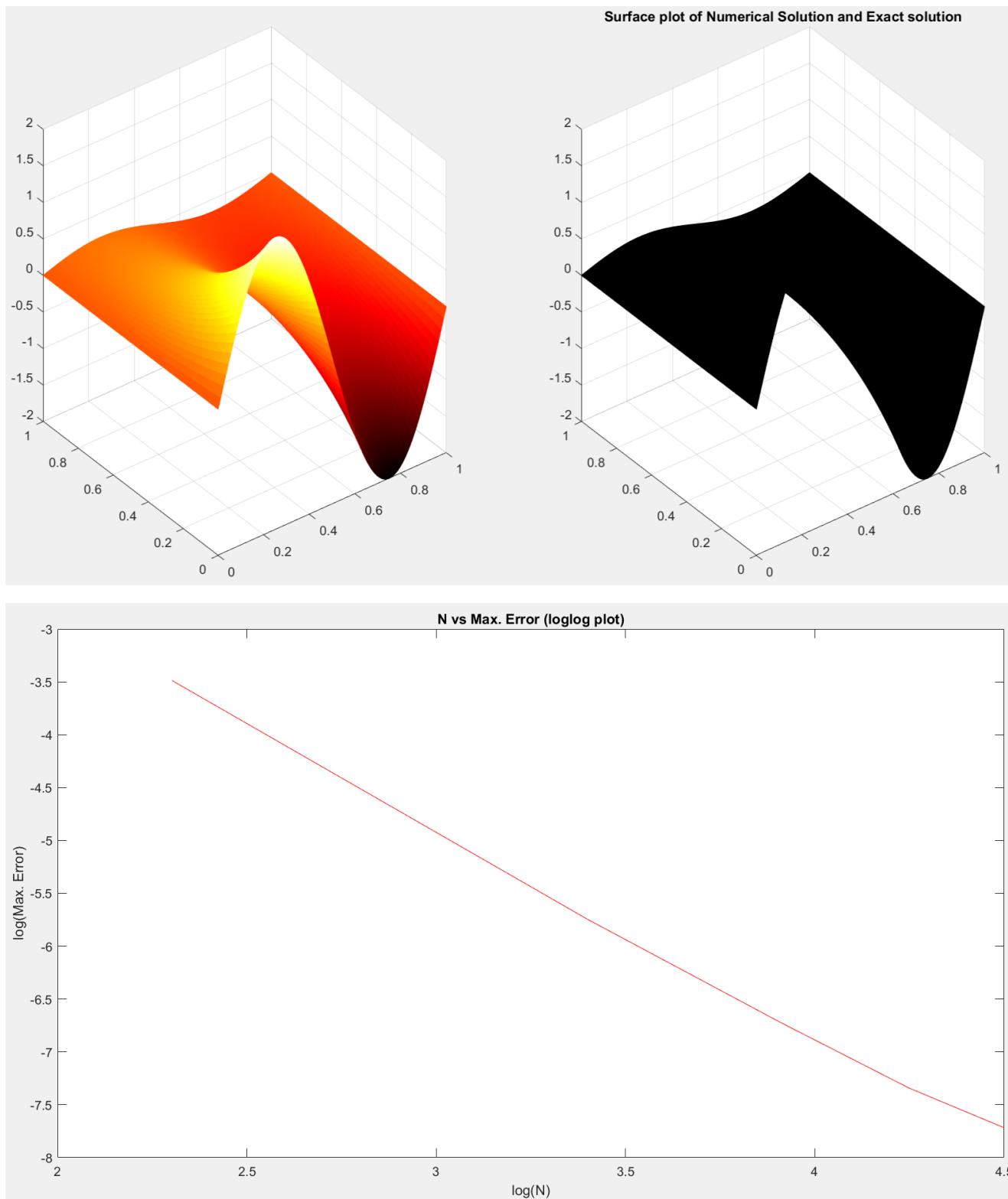
Using backward-time and central space (BTCS) discretization scheme,





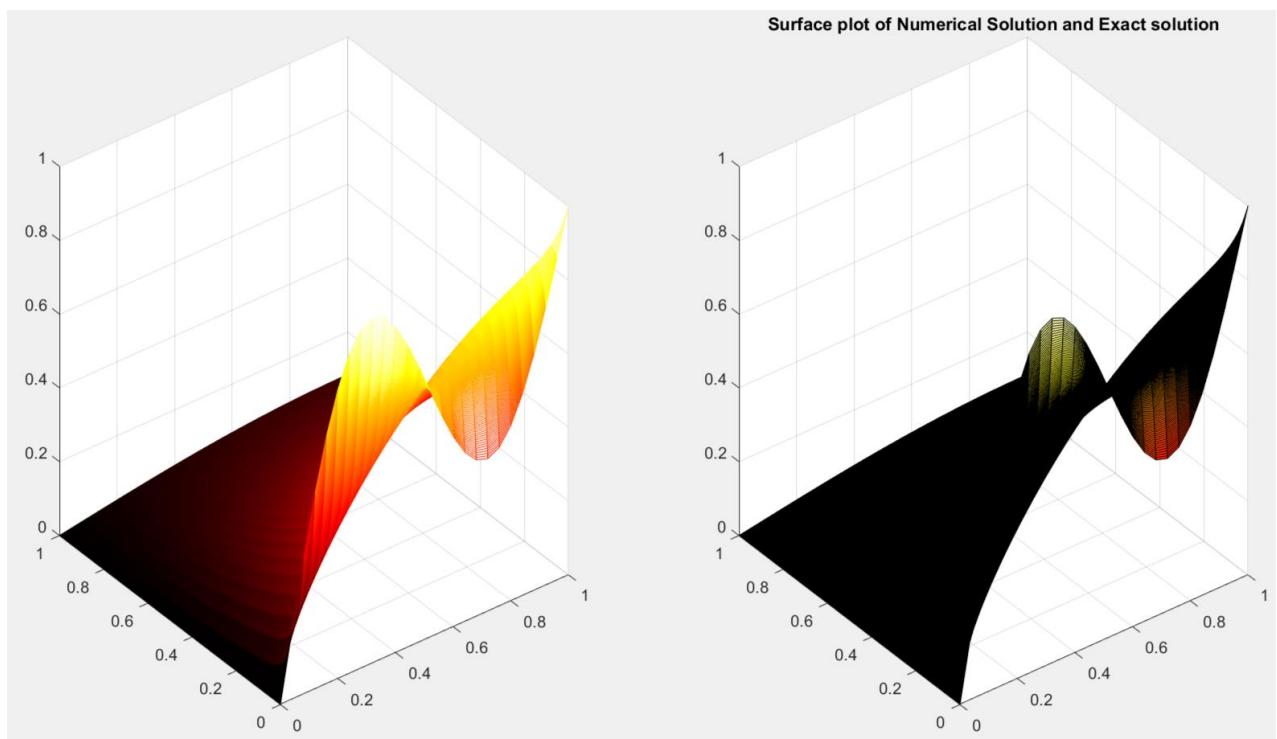
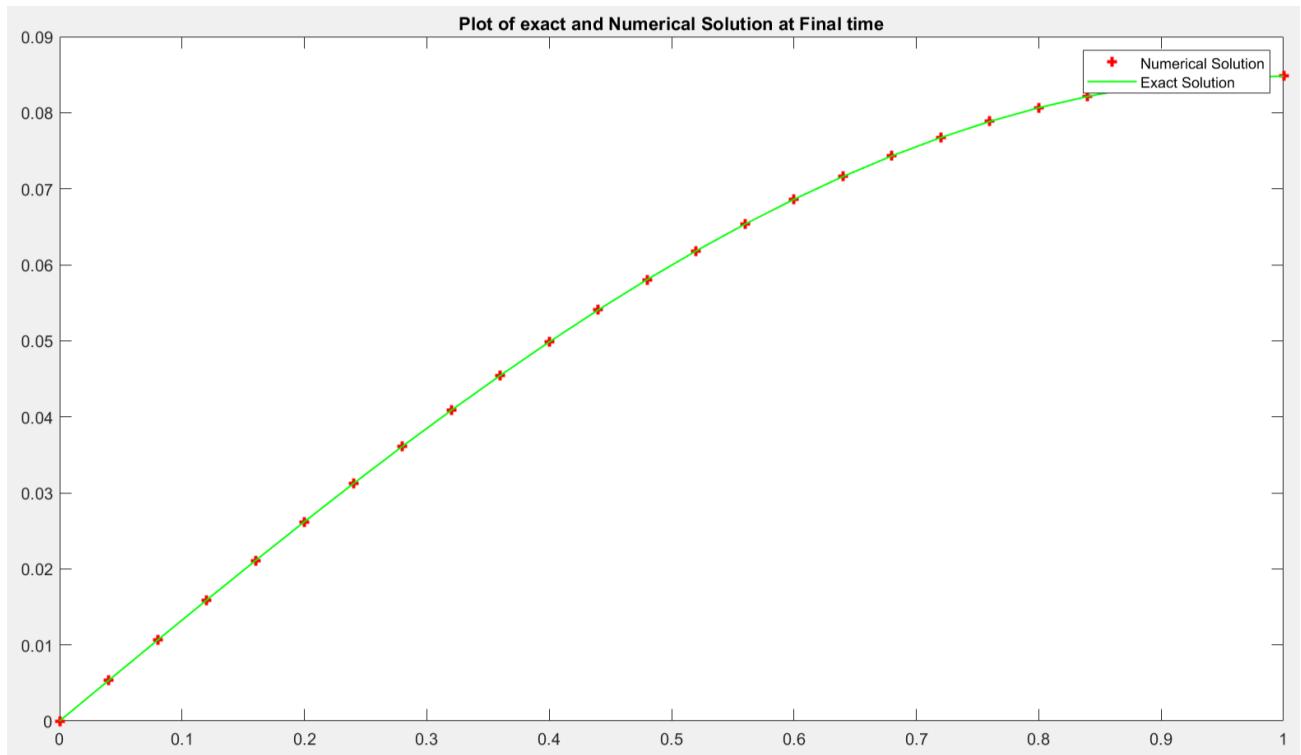
Using Crank–Nicolson scheme,

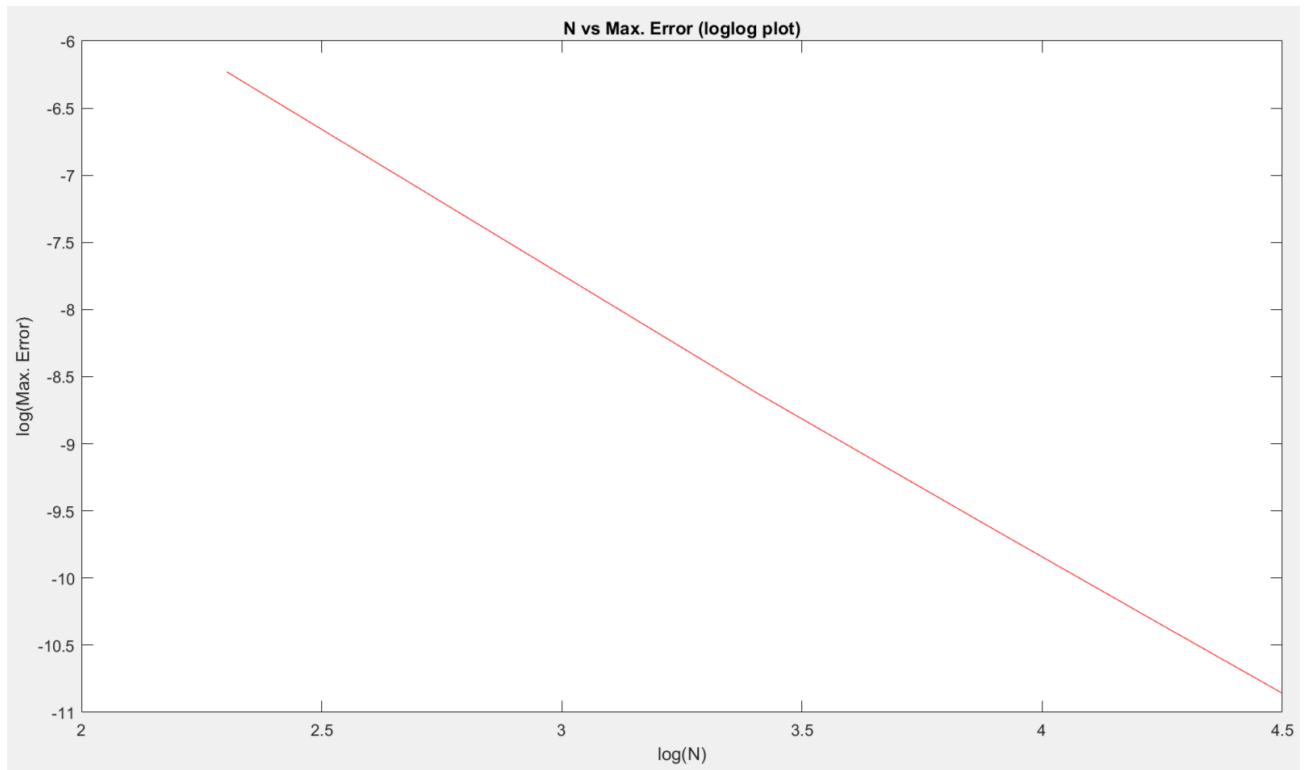




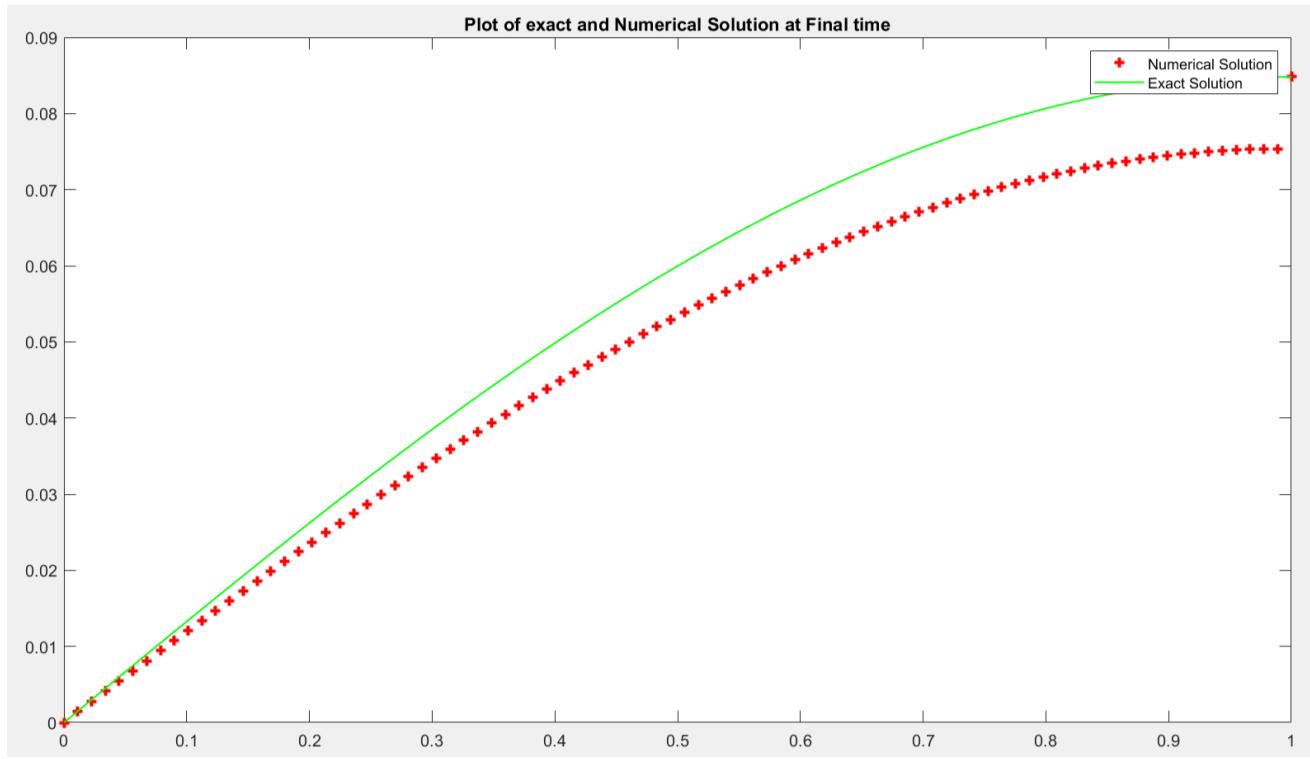
b)

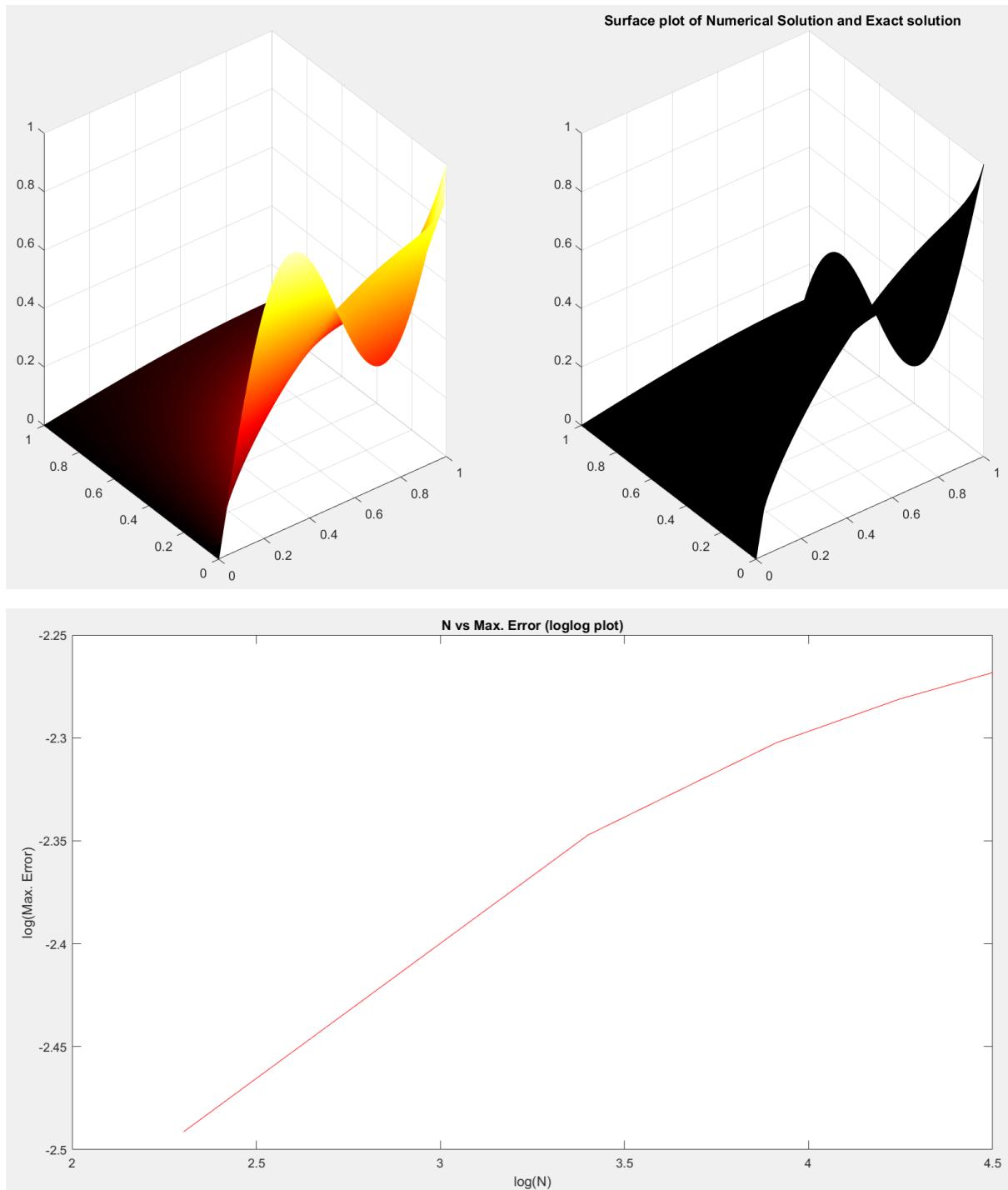
Using forward-time and central space (FTCS) discretization scheme,





Using backward-time and central space (BTCS) discretization scheme,





Using Crank–Nicolson scheme,

