|  |  |
| --- | --- |
| t | U |
| 0.0000 | 1.0000 |
| 0.0025 | 1.0000 |
| 0.0050 | 1.0000 |
| 0.0075 | 0.9969 |
| 0.0100 | 0.9923 |
| 0.0125 | 0.9872 |
| 0.0150 | 0.9818 |
| 0.0175 | 0.9762 |
| 0.0200 | 0.9708 |
| 1.000 | 0.1786 |

B Solution obtained by finite difference method

At x = 0.00 At x =0.10 At x =0.20

|  |  |
| --- | --- |
| t | U |
| 0.0000 | 1.0000 |
| 0.0025 | 0.9500 |
| 0.0050 | 0.9275 |
| 0.0075 | 0.9111 |
| 0.0100 | 0.8978 |
| 0.0125 | 0.8864 |
| 0.0150 | 0.8764 |
| 0.0175 | 0.8673 |
| 0.0200 | 0.8590 |
| 1.0000 | 0.1534 |

|  |  |
| --- | --- |
| t | U |
| 0.0000 | 1.0000 |
| 0.0025 | 1.0000 |
| 0.0050 | 0.9875 |
| 0.0075 | 0.9756 |
| 0.0100 | 0.9648 |
| 0.0125 | 0.9549 |
| 0.0150 | 0.9459 |
| 0.0175 | 0.9375 |
| 0.0200 | 0.9296 |
| 1.0000 | 0.167 |

At x = 0.30 At x = 0.40 At x = 0.50

|  |  |
| --- | --- |
| t | U |
| 0.000 | 1.0000 |
| 0.003 | 1.0000 |
| 0.005 | 1.0000 |
| 0.008 | 1.0000 |
| 0.010 | 0.9992 |
| 0.013 | 0.9977 |
| 0.015 | 0.9956 |
| 0.018 | 0.9931 |
| 0.020 | 0.9902 |
| 1.000 | 0.1867 |

|  |  |
| --- | --- |
| t | U |
| 0.000 | 1.0000 |
| 0.003 | 1.0000 |
| 0.005 | 1.0000 |
| 0.008 | 1.0000 |
| 0.010 | 1.0000 |
| 0.013 | 0.9998 |
| 0.015 | 0.9993 |
| 0.018 | 0.9985 |
| 0.020 | 0.9974 |
| 1.000 | 0.1917 |

|  |  |
| --- | --- |
| t | U |
| 0.000 | 1.0000 |
| 0.003 | 1.0000 |
| 0.005 | 1.0000 |
| 0.008 | 1.0000 |
| 0.010 | 1.0000 |
| 0.013 | 1.0000 |
| 0.015 | 0.9999 |
| 0.018 | 0.9996 |
| 0.020 | 0.9991 |
| 1.000 | 0.1933 |

C. Comparison of analytical and finite difference solution at x=0.20

|  |  |  |
| --- | --- | --- |
| t | Uac | Ufd |
| 0.0000 | 1.0010 | 1.0000 |
| 0.0025 | 0.9999 | 1.0000 |
| 0.0050 | 0.9984 | 1.0000 |
| 0.0075 | 0.9950 | 0.9969 |
| 0.0100 | 0.9905 | 0.9923 |
| 0.0125 | 0.9855 | 0.9872 |
| 0.0150 | 0.9802 | 0.9818 |
| 0.0175 | 0.9748 | 0.9762 |
| 0.0200 | 0.9695 | 0.9708 |