Batch 1:

|  |  |
| --- | --- |
| Method | Put Price |
| Exact Solution | 5.84628 |
| Monte Carlo | 5.84315 |
| FDM | 5.84207 |

Batch 2:

|  |  |
| --- | --- |
| Method | Put Price |
| Exact Solution | 7.96557 |
| Monte Carlo | 7.97047 |
| FDM | 7.96321 |

Batch 3:

|  |  |
| --- | --- |
| Method | Put Price |
| Exact Solution | 4.07326 |
| Monte Carlo | 4.07227 |
| FDM | 4.07128 |

Batch 4:

|  |  |
| --- | --- |
| Method | Put Price |
| Exact Solution | 1.24750 |
| Monte Carlo | 1.24861 |
| FDM | 1.19586 |

When comparing option price from Batches 1 to 4 to exact solution using Finite Difference Method (FDM) and Monte Carlo, Batches 1 to 3 show high accuracy with differences limited to two decimal places. However, Batch 4 reveals a larger FDM discrepancy. Possibly, it is because N (linked to k = O(h^2)) is not high enough. This emphasizes FDM's sensitivity to parameter choices.

The relationship between spatial discretization (J) and temporal discretization (N) in FDM underscores the importance of ensuring N is significantly greater than J for stability. Meanwhile, for Monte Carlo, increasing NT or NSIM generally enhances accuracy.

In summary, both methods are robust, but FDM requires some slightly adjustments. The discrepancy in Batch 4 suggests the importance of parameter selection for achieving optimal accuracy.