Question 1

Which of the following statements concerning the Black Scholes formula is true?

1.  The Black Scholes use the Gaussian probability density (pdf) function.
2.  There are exact solutions for option sensitivities for the Black Scholes model.
3.  The Black Scholes use the Gaussian cumulative distribution function (cdf).
4.  Put-call parity relates put and call option prices.
5.  The Black Scholes formula is valid for non-constant volatility.
6.  There is a closed solution for plain options.
7.  Perpetual American options have a closed solution.
8.  There is a closed solution for options with early exercise.

Question 2

Which of the following concerning FDM is true?

1.  Explicit FDM require the solution of a matrix system at each time level.
2.  Divided differences can have first-order or second-order accuracy.
3.  There are no constraints on the step sizes in space and time with explicit FDM.
4.  They replace partial derivatives by divided difference approximations.
5.  There are no constraints on the step sizes in space and time with implicit FDM.

Question 3

Which of the following concerning the Explicit Euler method is true?

1.  The Explicit Euler (EE) method is unconditionally stable.
2.  Oscillations occur with EE if the mesh time step is not of the same order as the square of the mesh size in space.
3.  EE is first order accurate in the time direction.
4.  The Crank Nicolson method is unconditionally stable and second-order accurate.

Question 4

Which of the following concerning the Monte Carlo method is true?

1.  Computing option sensitivities with MC is feasible (but not efficient).
2.  The FDM schemes used to discretise SDEs can give biased results.
3.  It is not possible to price barrier options using the MC method.
4.  Pricing American options using FDM is easier than with MC.
5.  The Monte Carlo (MC) is less efficient than FDM.

Question 5

Which of the following concerning the Binomial Method Carlo method is true?

1.  The Binomial Method (BM) can be used to price American options.
2.  BM can give 'zigzag' and oscillatory solutions.
3.  BM cannot be used for two-factor models.
4.  BM is less flexible than FDM.

Result