DNA Transposition

1. What is the difference between a simple transposon and a complex transposon?
2. What is the chemistry of strand cleavage by a transposase?
3. What are the chemical groups present at the DNA ends formed by transposase mediated cleavage?
4. What is the chemistry of strand joining by a transposase?
5. What is a cointegrate intermediate formed during transposition?
6. How many copies of the transposon are present in the cointegrate?
7. Is the target site duplicated in the cointegrate?
8. How are the two copies of the transposon oriented in the cointegrate, direct (head-to-tail) or inverted (head-to-head)?
9. How can the cointegrate be resolved into a simple integrant?
10. In the simple integrant, does the target duplication flank the transposon? Is the duplication in direct (head-to-tail) or inverted (head-to-head) orientation?
11. Can you indicate by a simple diagram or in simple terms how adjacent inversions or adjacent deletions can arise during transposition?
12. Are adjacent inversions and deletions formed during intra-molecular or inter-molecular transposition?
13. If transposition occurs in a circular DNA molecule by the cleaved strand attacking a phosphodiester target on the same strand, will an inversion or deletion occur? What result will be obtained if the target phosphodiester is on the opposite strand?