Assignment 5

Due on 2019-08-09, 23:59 IST.

1. Polarization transfer between the nucleus spin is caused by

- J coupling
- Coupling with the magnetic field
- Coupling with the RF

2. The nuclear Overhauser effect because of

- Transfer of single quantum transition probability
- Generation of double quantum transition probability
- Transfer of zero quantum transition probability

3. In an AX system, while saturating the A-spin, the polarization gain by steady-state NOE is

- Proportional to 3\( \rho \)
- Proportional to 2\( \rho \)
- Proportional to \( \rho \)

4. In an AX system, transfer of polarization from A-spin to X-spin in a selective population inversion SIR experiment requires

- Selective inversion of the X-spin transition
- Selective inversion of the A-spin transition
- Selective inversion of one of the A-spin transition

5. In an AX system, transfer of polarization between A-spin and X-spin requires

- Proportional to the A-spin

6. Estimation of the distance between spins A and B by a transient NOE experiment requires

- Signal oscillation
- Short mixing time
- Large mixing time
- Is independent of the mixing time

7. The spectral density function is

- Power distribution as a function of frequency due to molecular motion
- Independent of the spectroscopist frequency

8. In an INEPT experiment,

- Polarization is transferred from sensitive to insensitive nucleus
- Polarization is transferred from insensitive to sensitive nucleus
- The transfer efficiency is independent of the type of the molecule

9. For a 1H-1H ROESY experiment

- The enhancement is always negative
- The enhancement is always positive
- The sign of NOE is positive for small molecules and negative for large molecules

10. For a 31P type system with on- and off-resonance 129 Hz, the relaxation delay should be

- 4 ms
- 4 ms
- 1 ms

Acknowledged Answers

A and C

A and C

A, B, and D

A, B, and C

A and C

A and C

A, B, and D

A, B, and D

A, B, and C

A, B, and C

A and C

A and C

A, B, and C

A, B, and C

A, B, and C