Weekly Assignment of Pharmaceutical Analysis-II (Prepared by Dr. Supriyo Saha)

- 1. Carbon atom with mass number of 13 respond to NMR Spectra?
- a. True
- b. False
- 2. The spin of nucleus is align with the orientation of the external magnetic field?
- a. Alpha spin
- b. Beta spin
- 3. Precessional frequency is not directly proportional with strength of external magnetic field?
- a. True
- b. False

4. Nuclei of hydrogen is surrounded by electron dense group, which to some extent shields the nucleus from the influence of the applied field B_0

- a. Shielded
- b. Deshielded
- 5. Full name of TMS:
- a. Trimethylsilicon
- b. Tetramethylsilane
- 6. CCl4, CS2, D2O, H2O, DMSO among these which one is not a NMR solvent?

Ans:

- 7. Hydrogen bonding increase?
- a. Shielding
- b. Deshielding
- 8. If number of adjacent atom is 2 then what will be the number of peaks observed?

a. 4

b. 3

9. How many possible orientations do spin $\frac{1}{2}$ nuclei have when they are located in an applied magnetic field?

a. 2

b. 3

10. When radiation energy is absorbed by a spin 1/2 nucleus in a magnetic field, what happens?

a. The precessional frequency of the nucleus increases

b. The angle of precession " flips " so that the magnetic moment of the nucleus opposes the applied field

11. NMR Spectroscopy is used for determining the chemical structure with physical property?

a. Solid

b. Liquid

c. Gas

12. NMR study is frequency wave?

- a. Ultraviolet
- b. Radiofrequency
- c. Microwave

13. If the number of proton or neutron is even, the spin of nucleus will be?

- a. Integral spin
- b. Half-Integral spin
- c. Zero spin.

14. The difference between the field necessary for resonance in the sample and in some arbitrary choosen compound in which of the following?

- a. Field shift
- b. Chemical shift
- c. Resonance shift

15. In the structure of methyl acetate, two methyl groups showed two peaks at

- a. 2.0 and 3.6 PPM.
- b. 1.5 and 3.0 PPM
- c. 1.0 and 2.5 PPM
- 16. ¹³C NMR has less than 1.1% abundance in nature
- a. True
- b. False