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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- May 2017

B.Tech/ M.Tech VIII/X Semester

COURSE CODE: L-11B1WBT840

MAX. MARKS: 35

COURSE NAME: Nano-Biotechnology

COURSE CREDITS: 3

MAX. TIME: 2 Hr

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. XXXXXXXXXXXXXXXXXXXXXXXX

Part A: Answer the following Questions (2 mark each).

1. Define Chemical Shift.
2. Why TMS (Trimethyl silane) is used as standard in NMR spectroscopy.
3. Why does the methyl proton of 1-chloro 1-bromo ethane appear as doublet ?
4. Define (a) Larmor frequency (b) Boltzmann distribution
5. Write a note on solvent used in NMR

Part B: Answer the following Questions (3 mark each).

1. Define Chemical shift and chemical shielding.
2. Working Principle of XRD
3. Detail description of Confocal Microscopy
4. Define (a) radiative decay (b) Stokes shift (c) non-radiative decay
5. Write down the Ideal characteristic of targeted drug delivery system

Part B: Long Answer Questions (5 marks each).

1. Explain in detail (a) Mode of operation of AFM (b) Advantages of targeted drug delivery system
2. What is Nanosensor, design a sensor for colorimetric detection of mercury in aqueous sample using nanoparticles.