Dr Abhishek

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
T2 EXAMINATION-APRIL 2018
B.Tech/M.Tech VIII Semester

COURSE CODE: 11B1WBI840 MAX.MARKS: 25
COURSE NAME: Nano-Biotechnology Max Time: 1.5 Hr
COURSE CREDITS: 3

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

Q.1 what term best describe a transition occurring between states of the same multiplicity and it take place at a time scale of 10^{-12} s [1].

Q.2 What is quantum yield? Write down the relationship between quantum yield, radiative and non radiative rate constant ? [2]

Q.3 What is stoke shift and what cause it? [2]

Q.4 What is the difference between an excitation spectrum and emission spectrum [2]

Q.5 Define fluorescence, fluorophore, excitation maximum and emission maximum.[4]

Q.6 what is the difference between singlet excited and triplet excited state?[2]

Q.7 Explain radiation mediated synthesis of nanoparticles with mechanism [4]

Q.8 writes a note on "mechanical properties" of material at nanoscale [2]

Q9 Answer the following [2x3]

(a) Difference between static and dynamic quenching

(b) Compton effect

(c) Stern volmer quenching constant