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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST-1 EXAMINATION- February -2019

Ph.D. Physics

COURSE CODE:13P1WPH112

MAX. MARKS: 15

COURSE NAME: Materials Characterization

COURSE CREDITS: 3

MAX. TIME: 1 HRS

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

1. Write short notes on

[5 x1=5]

i. Frank Condon Principle

ii. Absorption and emission path ways

iii. Substituent effects

iv. Singlet and triplet state

v. Quantum yield of fluorescence

2. Discuss about observed electronic transitions and their graphical representation. [2.5]

3. Discuss the selection rules in UV-VIS spectroscopy. [2.5]

4. Describe the fluorescence processes with respect to excitation, relaxations, emission, stoke shift, invariance of emission wavelength and mirror image rule. [5]