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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST-1 EXAMINATION- SEPTEMBER -2018

Ph.D. I Semester

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.*

Q.1. Write short notes on: [1 x 3]

a. Atomic scattering factor

b. Particle size and crystallite size

c. What contributes FWHM of XRD peak profile?

Q.2. What are the characteristic and Bremsstrahlung radiations in X-ray generation process. Comment on K-alpha and K-beta radiations. [3]

Q.3. What is the anatomy of the X-ray diffraction pattern? What can be determined from X-ray data? [3]

Q.4. How to separate crystallite size broadening and strain broadening, present analytical method to do the same. [3]

Q.5. How many types of signals are there in SEM? Which signals contributes most in SEM image formation. Also discuss electron beam sample interaction in SEM. [3]