

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION, September-2016

B.Tech. VII Semester

COURSE CODE: 10B1WPH731

MAX. MARKS: 15

COURSE NAME: NANOSCIENCE AND TECHNOLOGY

COURSE CREDITS: 3-0-0

MAX. TIME: 1.0 HR

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Note: All questions are compulsory; carrying of mobile phone during examination will be treated as case of unfair means. Attempt all questions

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Section-A [1x3 = 3-marks]

1. Show that the surface to volume ratio increases with the decrease in dimension of particles.
2. What are the major routes of nanosynthesis?
3. What precursor and stabilizer would you prefer to synthesize silver nanoparticles?

Section-B [3x4 = 12-marks]

4. Prove that the nanoparticles stabilize with (111) surface for materials crystallizing with face centered cubic crystallinity.
5. Discuss the critical constraints for the homogeneous nucleation of nanomaterials.
6. How would you synthesize gold nanoparticles? What is its color? Why color of nano gold is different from bulk gold?
7. Write short notes (a) Micellar technique (b) Ostwald ripening.