

Dr. Rajesh KV

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -I EXAMINATION- February 2019
PhD (2nd SEM)

COURSE CODE: 16P1WPH211

MAX. MARKS: 15

COURSE NAME: Advances in Nanotechnology

COURSE CREDITS: 03

MAX. TIME: 1 Hrs

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. Attempt all the questions in sequence.

- 1) Explain the theory given by Derjaguin, Landau, Verwey and Overbeek, demonstrating interaction between two particles. (5)
- 2) Explain the concept of surface energy in order to stabilize nanostructures and nanomaterials. Show that low index facets have low surface energy. (2)
- 3) What are the different approaches to minimize the energy at surface and individual nanostructure level? Give a brief discussion. (3)
- 4) What is difference between in Ostwald ripening and sintering? Discuss schematically. (5)