

Dr. Hazare

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST - 3 EXAMINATION - December-2018

Ph.D I Semester

COURSE CODE: 13P1WPH113

MAX. MARKS: 35

COURSE NAME: ADVANCED MATERIALS SCIENCE

COURSE CREDITS: 03

MAX. TIME: Two Hours

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

- Q1. Write short notes on (a) Copolymer (b) Ceramic green body (c) Dielectric breakdown (d) Plasma etching (e) Ostwald ripening [5 × 2-Marks = 10-Marks]
- Q2. What is antiferromagnetism? Explain the concept of spin canting. [5-Marks]
- Q3. What are easy and hard directions of magnetization? Also, elaborate on the magnetic anisotropy. [5-Marks]
- Q4. What is the effect of frequency on the polarizability in dielectric materials? What are ferroelectric materials? [5-marks]
- Q5. Discuss briefly the following: (a) Effect of capping agent on the nanoyield (b) Core-shell nanoparticles [5-marks]
- Q6. With the help of suitable schematics, explain the use of lithography for the creation of nanostructures. [5-marks]