

Roll No.

Dr Ragni Raj Singh

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
MAKEUP EXAMINATION – 2016
B. TECH.(IV SEM)

Course Code: **10B11PH212**

Max Marks: **25**

Course Name: **Biophysical Techniques**

Course Credits: **04**

Max Time: **1Hr 30 Min**

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

All questions carry equal marks (2.5 X 10)

- Q.1. What are the fundamental principles of X-ray powder diffraction? Give advantages of the method?
- Q.2. How to improve the accuracy of XRD analysis? What contains the actual XRD pattern?
- Q.3. How to determine the relative proportions of crystalline phase present in an unknown sample?
- Q.4. Write a note on reciprocal versus real lattice. Why there is a need to study reciprocal lattice? Discuss the properties of the reciprocal lattice?
- Q.5. Differentiate between SE1 and SE2? Also discuss BSE2.
- Q.6. What is GSED? Discuss gaseous secondary electron detector with the help of the diagram.
- Q.7. Discuss about the epidermal surface characters of plants by SEM?
- Q.8. Write a note on contrast in TEM. Also draw the ray diagram.
- Q.9. Draw the possible absorption and emission pathways. Also discuss the instrumentation involved in UV-Vis spectrometer.
- Q.10. Plot the standard signature graph between wavelength versus optical density of DNA and RNA protein. Give the values of molar absorptivities of DNA and RNA.