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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- Feb 2020

M.Sc. II Semester / Ph.D.

COURSE CODE: 19MS2BT211 / 14M1WBT332

MAX. MARKS: 15

COURSE NAME: MOLECULAR AND CLINICAL DIAGNOSTICS / CLINICAL DIAGNOSTICS

COURSE CREDITS: 3

MAX. TIME: 1Hr

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

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- Q1. Explain principle and application of X-ray diffraction Analysis. (CO III) [2.5]
- Q2. How circular dichroism data is analyzed? Draw the standard CD curve for following protein conformations a) Beta sheet structure b) Random coil. (CO III) [2.5]
- Q3. Describe 'Hybridoma Technology' for monoclonal antibody production with suitable flow chart or diagrams. Discuss the essentiality of HGPRT (negative) myeloma cells and Aminopterin in the process. [CO-I] [4.5]
- Q4. Presence of Syphilis infection, caused by *Treponema pallidum* can be identified by interaction of its immunogenic antigen with a complementary antibody, using any precipitation or agglutination based technique. Design an experiment using a method of your choice for diagnosis, with suitable reasons for your choice. Discuss the logistics and applications of such a method. [CO-IV] [4]
- Q5. Draw and precipitin curves containing constant concentration of Antibody (1M) with different molar concentrations of a monovalent Antigen (0.6M, 1.2M, and 2.4M). [CO-I] [1.5]