

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATIONS-2022

M.Sc. (BT)-I Semester (BT)

COURSE CODE (CREDITS): 18MS1PH11 (2)

MAX. MARKS: 25

COURSE NAME: Basics of Physics and Chemistry

COURSE INSTRUCTORS: Dr. Poonam Sharma/Prof. Sunil Khah

MAX. TIME: 1:30 Hour

Note: All questions are compulsory. Marks are indicated against each question in square brackets.

- Q1(a). Explain the applications of colloids in sewage disposal and purification of polluted air. 3
- (b). Elucidate why "Tyndall effect" is quite strong in lyophobic colloids and weak in lyophilic colloids. 3
- Q2(a). Discuss the factors affecting the solubility of solutes. 3
- (b). Elaborate the difference between ideal and non-ideal solutions. 3
- Q3(a). A solution of NaOH (molar mass 40 gmol^{-1}) was prepared by dissolving 1.6 g of NaOH in 500 cm^3 of water. Calculate molarity of the solution. 3
- (b). "Osmosis play important role in blood cells". Defend the statement. 2
- Q4(a). Physisorption and chemisorption have different type of characteristics. Explain. 3
- (b). What are the main components of adsorption? 2
- (c). How endergonic and exergonic reactions are related? 3