UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Eighth Semester – Spring 2022

Roll No. .....

Paper: Physical Chemistry (Sp. Theory-I) **Course Code: CHEM-422** **Time: 3 Hrs. Marks: 60**

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Write short answers to the following questions. (15x2=30)

i. Explain why the mass of an atom is less than the sum of the masses of its component particles.

ii. Differentiate natural and artificial radioactivity?

iii. Give examples of uses of radioactive tracers in analytical chemistry.

iv. What is tyndall effect?

v. Briefly describe thixotropy?

vi. Give harmful effects of radioactivity?

vii. Write down mechanism of stellar fusion reaction of Hydrogen.

viii. Write down names of methods used to measure osmotic pressure.

ix. Define isotonic solutions.

x. What are the objections to bombardment theory?

xi. How are emulsions purified?

xii. What is molecular sieve theory?

xiii. Define electro dialysis.

xiv. What is reverse osmosis?

xv. . What are different types of osmosis?

Write detailed answers to the following questions. (5x6=30)

Q2. What is semipermeable membrane? Classify artificial membrane.

Q3. Discuss orientation theory of emulsification.

Q4. Write a note on molecular weight determination by osmometry.

Q5. Describe bombardment theory of osmosis.

Q6. What is radioactivity? Describe the rate of disintegration of radioactive elements.

Q7. Distinguish between fusion and fission with help of examples.