

Roll No. ....

61202

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B. Sc. (Pass Course) Chemistry  
6th Semester (Regular/Re-appear/  
Improvement) Examination – May-2023

CHEMISTRY-II : PHYSICAL CHEMISTRY

Paper : CH-602

Time : Three Hours ]

[ Maximum Marks : 29

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt five questions in all, selecting one question from each Unit. Question No. 1 is compulsory.

1. (a) Define mole fraction. 1
- (b) What do you mean by quenching ? 1
- (c) What is meant by secondary process in photochemistry ? 1

(d) Define metastable equilibrium. 1

(c) What are term symbols ? 1

UNIT - I

2. (a) Explain P.E. curves for bonding and antibonding molecular orbitals. 3
- (b) Define chromophores. Which type of electronic transitions occurs in them ? 3

missing question

P. T. ●.

5. (a) Explain Jablonski diagram in detail. 4  
 (b) What is photosensitization ? Give *one* example. 2

### UNIT - III

6. (a) Why there is depression in freezing point when a non-volatile solute is dissolved into a solvent ? Derive thermodynamically the relation between depression in freezing point and molecular mass of solute. 4  
 (b) Define : 2  
 (i) Normality  
 (ii) Vant Hoff factor
7. (a) Derive thermodynamically the expression for relative lowering of vapour pressure. 3  
 (b) Define Raoult's law. Derive it thermodynamically. 3

(3)

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### UNIT - IV

8. (a) Define Gibb's phase rule. Derive it thermodynamically. 3  
 (b) Draw and explain phase diagram of water system. 3
9. Explain the terms giving examples - phase, component and degree of freedom. 6

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