Sanjay Ghodawat University, Kolhapur

2020-21

Established as State Private University under Govt. of Maharashtra. Act No XL, 2017

EXM/P/09/00

Year and Program: 2020-21 F.Y.M.Sc.	**School of Science**	**Department: Chemistry**
Course Code: CHS505	**Course Title: Physical Chemistry-I**	**Semester : I**
Day : **Date :**	**End Semester Examination**	**Time : 2 Hrs.** **Max Marks : 50**

Question Paper

Instructions: 1) All Questions are compulsory.
2) Use scientific calculator if required.

		Marks	Bloom's Level	CO
Q.1	**Answer the following (any Two)–**			
a)	What is solution? Draw a vapour pressure composition diagram for an ideal binary solution obeying Raoult's law and compare this with similar diagram showing deviation from Raoult's law. Why do these deviations occur?	8	L1	CO1
b)	Discuss in detail Henry's law with its mathematical expression. Write down the limitations of Henry's law.	8	L1	CO1
c)	Derive the Maxwell's thermodynamic equations or relations in detail.	8	L2	CO1
Q.2	**Answer the following (any two) –**			
a)	What is enzyme catalysis? Discuss in detail mechanism and Michaelis-Menten expression	8	L1	CO2
b)	Explain briefly the collision theory of reaction rates with proper orientation and energy diagram. What are its limitations?	8	L2	CO2
c)	Derive an expression for Bose-Einstein statistics.	8	L2	CO3

Q.3 **Answer the following (any two) –**

a)	Describe in detail rotational partition function and its significance.	9	L3	CO3
b)	Discuss in detail structure of amino acids, peptide and proteins.	9	L2	CO4
c)	Write a note on i) Van der Waals forces of attraction ii) Lenard-Jones potential.	9	L3	CO4

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