No.	:	
	No.	No. :

Total No. of Questions: 11]

[Total No. of Printed Pages : 3

CHEMSEM-103

M.Sc. (Ist Semester) Examination Dec., 2022 CHEMISTRY

Paper - CC-3

(Physical Chemistry-I)

Time: 3 Hours [Maximum Marks: 40

Section-A (Marks : $1 \times 10 = 10$)

Note: Answer all ten questions (Answer limit 50 words). Each question carries1 mark.

Section–B (Marks : $3 \times 5 = 15$)

Note: Answer all five questions. Each question has internal choice (Answer limit200 words). Each question carries 3 marks.

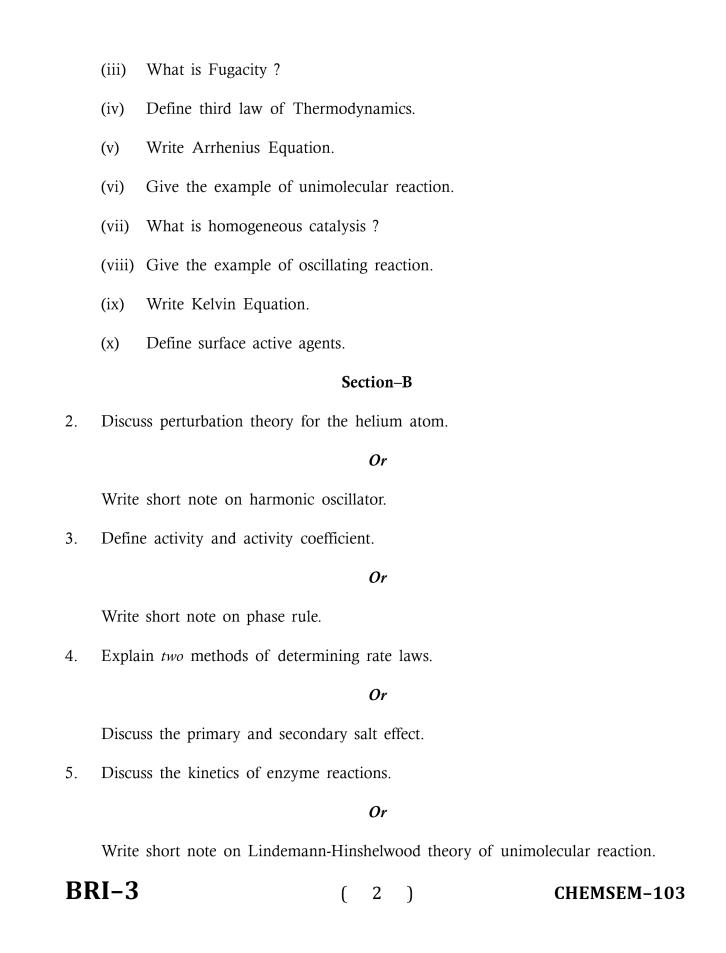
Section–C (Marks: $5 \times 3 = 15$)

Note: Answer any *three* questions out of five (Answer limit **500** words). Each question carries **5** marks.

Section-A

- 1. (i) Write Schrödinger wave equation for the hydrogen atom.
 - (ii) What is the energy of particle in a box?

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6. Write short note on microemulsion and reverse micelles.

Or

Discuss the factors affecting the CMC of surfactants.

Section-C

- 7. Derive Schrödinger equation.
- 8. Explain partial molar free energy and partial molar volume.
- 9. Discuss in detail Collision theory of reaction rate.
- 10. Explain two methods for the study of fast reactions.
- 11. Derive BET equation.