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**GIET UNIVERSITY, GUNUPUR – 765022**

M. Sc. (Second Semester) Examinations, September – 2021

20CHPC203 – Physical chemistry-II

(Chemistry)

Time: 2 hrs

Maximum: 50 Marks

(The figures in the right hand margin indicate marks.)**PART – A**Q.1. Answer **ALL** questions**(2 x 10 = 20 Marks)**

- What is the relation between C_p and C_v ?
- Define chemical potential?
- What do you mean by efficiency of heat engine?
- Define thermodynamics probability
- What is the law of equipartition of energy?
- What is microscopic reversibility ?
- Differentiate between equilibrium stationary state and non-equilibrium stationary state
- State the postulates of irreversible thermodynamics
- Define ionic strength
- Define secondary salt effect

PART – B (6 x 5 = 30 Marks)Answer ANY FIVE the questions

Marks

- What is fugacity? How can you determine fugacity from approximation method (6)
- Explain Fermi-Dirac statistics? (6)
- Derive an expression for entropy production in chemical reactions (6)
- Write a detailed note on Belousov - Zhabotinsky reaction ? (6)
- Explain the Collision theory of reaction rate with the equation of modified collision theory? (6)
- Discuss the vibrational partition function and its relation with internal energy and entropy (6)
- Write a note on photochemical reaction process for formation of HCl in the absence of oxygen (6)

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