QP CODE: 26001032

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Reg No : .....

Name : .....

B.Sc DEGREE (CBCS)SPECIAL REAPPEARANCE EXAMINATIONS, JANUARY 2026

Fifth Semester

CORE COURSE - CH5CRT07 - PHYSICAL CHEMISTRY - I

Common for B.Sc Chemistry Model I, B.Sc Chemistry Model II Industrial Chemistry & B.Sc Chemistry Model III Petrochemicals

2017 Admission Onwards

6B4F7319

Time: 3 Hours Max. Marks : 60

Part A

*Answer any **ten** questions.*

*Each question carries **1** mark.*

1. What is meant by excluded volume?
2. What is critical volume of a gas?
3. What is meant by collision number?
4. Define coefficient of viscosity
5. Name any three types of intermolecular forces.
6. Write two examples of compounds having fluorite type structure.
7. What type of crystal defect is shown by AgBr?
8. Which group elements form n type and p type semiconductors?
9. Why a liquid crystal be called so?
10. Give an example for physisorption.
11. What is meant by an adsorption isobar?
12. What is the importance of BET equation?

(10×1=10)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. How is kinetic theory modified to explain the deviations of real gases from ideal behaviour?

14. Discuss the virial equation of state.

15. Discuss the effect of temperature on distribution of molecular velocities.

16. What is surface tension? How is it determined?

17. What is a unit cell? Explain the different parameters for the characterisation of a unit cell.

18. Briefly explain the Debye Scherrer method for the analysis of crystal structures.

19. How will you analyze the structure of NaCl by Powder Diffraction method?

20. What are sols and emulsions? Give an example for each

21. a) Explain the term micelle and briefly explain their structure. b)What is critical micelle concentration?

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **10** marks.*

22. What are the postulates of kinetic theory of gases? Derive the kinetic gas equation.

23. What is meant by coefficient of viscosity? How is viscosity determined using Ostwald viscometer?

24. (a) Explain the Laws of Crystallography. (b) Write a short note on Weiss indices and Miller indices.

25. What is meant by zeta potential? Explain how an electrical double layer is formed in colloids.

(2×10=20)