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SUBJECT CODE NO: - Y-2157
FACULTY OF SCIENCE AND TECHNOLOGY
B.Sc. F.Y. SEM II (PATTERN-2013)
Examination April / May - 2024
Chemistry Paper - IV (Physical Chemistry)



[Time: 1:30 Hours]

[Max. Marks: 50]

Please check whether you have got the right question paper.

N. B

- 1) Attempt all question.
- 2) Draw diagram wherever necessary.

Q1 Derive Vander Waals equation of state. Explain critical phenomenon. **20**

OR

Define and explain space lattice and unit cell. Derive Brag's equation. **20**

Q2 Derive rate equation for second order reaction for equimolar concentration of reactants. **20**
 Give its characteristics.

OR

Write short notes on any four of the following. **20**

- a) Calculate the distance betⁿ two points lying on the straight line
 - i) (-5, 4) and (2, -3)
 - ii) (-4, 2) and (4, 6)
- b) Using logarithms solve
 - i) $760 \div 120$
 - ii) 520×210
- c) London forces
- d) Tyndall effect
- e) Homogeneous and Heterogenous Catalysis
- f) Classification of colloids

Q3 Multiple choice questions. **10**

- 1) $\log 400$
 - a) 2.6020
 - b) 2.1030
 - c) 1.2010
 - d) 1.5010
- 2) Equation of straight line is
 - a) $y = \frac{x}{c}$
 - b) $y = \frac{mx}{c}$
 - c) $y = Mx + c$
 - d) $M = \frac{x}{c}$
- 3) According to Boyls law, at constant temperature
 - a) $V \propto T$
 - b) $PV = \text{Constant}$
 - c) Both a & b
 - d) None of these
- 4) The intermediate state between solid and liquid state is
 - a) Liquid crystal
 - b) Solid crystal
 - c) Both a & b
 - d) None of these

- 5) _____ is a crystalline solid.
a) Plastic b) Rubber c) Glass d) NaCl
- 6) FCC type structure found in
a) AgCl b) NaCl c) MgO d) Both b & c
- 7) Buffer is an example of _____
a) Emulsion b) Gel c) Sol d) None of these
- 8) The blue colour of the sky is due to _____
a) Brownian movement b) Tyndall effect
c) The presence of macromolecules d) None of these
- 9) Rate of reaction _____ with temperature
a) Decrease b) Increase c) Constant d) Both b & c
- 10) A catalyst is in the same phase as that of the reactant is called _____
a) Autocatalyst b) Homogenous c) Heterogenous d) None of these

