

SUBJECT CODE NO: B-2162
FACULTY OF SCIENCE AND TECHNOLOGY
B.Sc. Pattern - 2013 (S.Y SEM IV)
Examination November / December 2025
Chemistry Paper-XI (Physical Chemistry-II)

[Time: 1:30 Hours]

[Max. Marks:50]

Please check whether you have got the right question paper.

N. B

- 1) Attempt all question
- 2) Figure to the right indicate full marks.

Q1 a) What is phase rule? Discuss the lead-silver system with phase diagram. **10**

b) Explain Arrhenius theory of electrolytic dissociation. Give its limitations. **10**

OR

c) Discuss phenol-water and nicotine water systems with diagrams **10**

d) Explain Ostwald's dilution law. Calculate cell constant and specific conductance **10**
 when 0.2N solution of a salt is placed between two platinum electrodes 2cm
 apart and area of cross section 4 cm² has a resistance of 200 ohms.

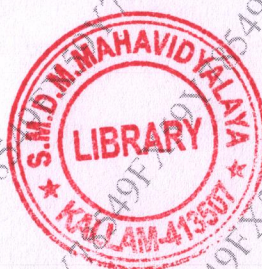
Q2 a) Explain standard hydrogen electrode with diagram? **10**

b) What is buffer solution? Explain the mechanism of acidic buffer? **10**

OR

c) **Short notes (any four)** **20**

- 1) Ideal and non-ideal solutions
- 2) Triple point
- 3) Kohlrausch's law
- 4) Advantages of conduct metric titrations.
- 5) Nernst equation
- 6) Wet corrosion



Q3 Multiple choice questions **10**

- 1) The phase rule was first discovered by
 a) Gibb's b) Nernst c) Bohr's d) Arrhenius
- 2) Number of phases present in water System in equilibrium at triple point
 a) zero b) three c) two d) one
- 3) The critical solution temperature of phenol- water system is
 a) 50°C b) 100°C c) 68°C d) 10°C

- 4) The number of phases in a mixture of O_2 , CO_2 and N_2 gases are
a) zero b) three c) two d) one
- 5) The transport number of nitrate ion in silver nitrate solution is 0.65, the transport number of silver ion will be
a) 0.35 b) 0.65 c) one d) zero
- 6) Ostwald's dilution law is applicable to
a) strong electrolyte b) weak electrolyte c) acids d) bases
- 7) The unit of conductance is
a) cm b) volt c) Mhos d) Joule
- 8) The standard electrode potential of hydrogen electrode is
a) three b) two c) one d) zero
- 9) Daniel cell is an example of
a) irreversible cell b) reversible cell c) both a & b d) none of these
- 10) The relationship between pH and POH is
a) $pH - pOH = 14$ b) $pH + pOH = 7$ c) $pH - pOH = 7$ d) $pH + pOH = 14$

