Total No. of Printed Pages:2

SUBJECT CODE NO:- B-2146
FACULTY OF SCIENCE AND TECHNOLOGY
B.Sc. S.Y (Sem-IV) Examination OCT/NOV 2019
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 i) Attempt all questions.
ii) Figures to the right indicate full marks.
iii) Use of non-programmable calculator is allowed.

Q.1 a) What is phase rule? Describe lead-silver system in detail. 10
b) What is reference electrode? Describe construction and working of standard hydrogen electrode. 10

OR

a) What is reversible electrode? Explain different types of reversible electrodes with suitable examples. 10
b) Give the postulates of Arrhenius theory. The resistance of 0.1 N salt solution was found to be 50 ohrus when placed between two electrodes which are 2 cm apart and having cross sectional area 4cm^2. Calculate the cell constant, specific conductance and equivalent conductance. 10

Q.2 a) What is critical solution temperature? Discuss phenol water system. 10
b) What are buffer solutions? Explain the mechanism of acidic buffer and basic buffer. 10

OR

Write short notes. (Any four) 20
i) Ideal and non-ideal solutions
ii) Nicotine and water system
iii) Kohlrausch law
iv) Ostward dilution law
v) Measurement of emf of cell
vi) Electro chemical theory of corrosion

Q.3 Choose and write the correct answer of the following. 10

1) The area of water system is --------
   a) Monovariant
   b) Bivariant
   c) Trivariant
   d) Non variant

2) The number of phases in a mixture of water and methanol is ----
   a) 0
   b) 1
   c) 2
   d) 3

3) The maximum degree of freedom of two component system is ---------
   a) 1
   b) 0
   c) 3
   d) 2

4) The unit of specific conductance is -------
   a) Ohmlem
   b) Mhoslem
   c) Nhos cm
   d) Ohm

5) Equivalent conductance of solution with dilution-----
   a) Increases
   b) Decreases
   c) Remains constant
   d) All of above

6) Reduction takes place at -------- in electrolytic cell.
   a) Anode
   b) Cathode
   c) Both a & b
   d) None of the above

7) The transport number of silver ion is 0.23. what is the transport number of nitrate ion------?
   a) 0.67
   b) 0.77
   c) 0.76
   d) 0.72

8) The pH of decinormal Hcl solution is ---------
   a) 0
   b) 1
   c) 0.5
   d) 2

9) The aqueous solution of NH4cl is -------
   a) Acidic
   b) Basic
   c) Neutral
   d) None of the above

10) The critical temperature of water is --------
   a) 174ºC
   b) 218ºC
   c) 374ºC
   d) 274ºC