Unit 6 - Electrochemical method, Ion selective electrodes

Electrochemical Method (Voltammetry and KF)_ Assignment_5

Due on 2022-05-04, 23:59 IST.

1. The function of mass in polarography is
   - To provide a movable electrode surface as cathode
   - To provide stabilization of polarographic maxima
   - To collect mercury in the anode
   - To eliminate interference
   (Correct answer: 1 point)

2. In Karl Fischer titration end point is determined
   - By color change
   - Chromatographically
   - Spectrophotometrically
   (Correct answer: 1 point)

3. In Karl Fisher reaction, a sulphur dioxide is used up in the formation
   - Pyridine - sulphur dioxide complex
   - Pyridine - sulphur oxide complex
   (Correct answer: 1 point)

4. A 0.1717 g of sodium acetate is mixed with 11.00 ml of KF reagent and back titrated to the known end point. The excess of KF was equal to 0.23 ml. Calculate the water content of the sample
   - 3.68% w/v
   - 3.62% w/v
   - 3.66% w/v
   (Correct answer: 1 point)

5. In Karl Fisher reaction standardization is done to contain 0.86 mg water to 30 ml methanol. 1.00 ml of DHF & titrate with 3 ml KF reagent. Calculate the volume of water, if 1.00 ml of DHF contains 0.14 mg water.
   - 0.036 ml
   - 0.038 ml
   (Correct answer: 1 point)

6. Water content is detected by
   - Acid-base titration
   - Complexometric titration
   - Karl Fischer titration
   - Precipitation titration
   (Correct answer: 1 point)

7. Reduction of oxygen in polarography leads to the formation of -------- acid solutions
   (Correct answer: 1 point)

8. What is the diffusion current of sodium perchlorate 0.1 M in water, n = 1 reduces 5 s & 4 seconds (n = 2 for Cl)
   - 0.254 micro amperes
   - 0.254 nano amperes
   (Correct answer: 1 point)

9. Combined glass pH electrode can be used as ion selective electrode for
   - Hydroxy ion
   - Potassium ion
   - Sodium ion
   - Any acid and chlorides inMetro
   (Correct answer: 1 point)

10. Karl Fisher reagent is not useful for
    - Bicarbonates
    - Basic oxides
    - Salts of weak acids
    - All of the above
    (Correct answer: 1 point)

Acceptable Answers:

For the answer incorrect, you get 0 points.

For multiple choice, all correct answers must be ticked to get the full points.

For short answer or fill in the blank, your answer must be correct or similar to what is presented in the question.

For calculations, you must show your working and calculations to get full points.

For numerical questions, the answer must be within 5% of the correct answer to get full points.