

[1/A-10]

SEAT NO. _____

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Sardar Patel University

S. Y. B. Sc. Examination
(Semester – III)

Date & Day: 06th December 2018, Thursday

Time: 02:00pm to 04:00pm

Industrial Chemistry & Industrial Chemistry Vocational
COURSE: US03ECHE05 (Basic Analytical Chemistry)

Notes: Figures to the right indicate full marks.

Total marks: 70

Q. 1 Answer the following Multiple Choice Questions. (All are compulsory) (10)

- The systematic error includes
 - Reagent error
 - Manual error
 - Methodic error
 - All of them.
- If the analyst has done some error, then it is known as...
 - Personal Error
 - Error Of The Method
 - Instrumental Error
 - Reagent Error
- The difference between experimental value and true value is called as....
 - Precision
 - Variance
 - Error
 - Accuracy
- If the indicators are mixed for observing the colour change over a desirable range of pH then the mixture is known as....
 - Middle Tint Of Indicator
 - Colour Change Range Of Indicator
 - Mixed Indicator
 - Universal Range Of Indicators
- The substance used for the detection of end point by colour change is...
 - Indicator
 - Buffer
 - Reagent
 - None Of These
- The difference between end point and theoretical end point is known as..
 - Titration Error
 - Random Error
 - 'A' And 'B' Both
 - None Of Above
- While preparing the solution of iodine, KI is added; which forms ____ complex.
 - EDTA
 - I₃⁻
 - I⁻
 - None Of These
- Increasing the size of the precipitates and reducing the co-precipitation can be done with the help of.....
 - Digestion
 - Washing
 - Ignition
 - Drying.
- A ligand can be....
 - Monodentate
 - Bidentate
 - Tridentate
 - All Of These
- An indicator used in Mohr's method is.....
 - K₂CrO₄
 - KMnO₄
 - KNO₃
 - None of these

[1]

[P. T. O.]

Q.2 Answer the following short questions. (Any TEN)

(20)

1. Define term Error.
2. Differentiate terms Accuracy & Precision.
3. Write an equation for t-test.
4. Define term "Titrant".
5. Define term "Equivalence point in titration."
6. Define term "Buffer solution".
7. Write a significance of H_2SO_4 in $KMnO_4$ titration.
8. Why, $KMnO_4$ is used in alkaline medium?
9. Potassium Dichromate is primary standard or not? Justify your answer.
10. Write a conditions which govern the choice of a suitable adsorption indicator.
11. Write advantages of Gravimetric Method.
12. Distinguish between "Coagulation & Peptization".

Q. 3 Write a notes on "Errors and its classification" and "F-test".

(10)

OR

Q. 3 Write a notes on "Methods for determination of accuracy" and "Linear regression analysis".

(10)

Q. 4 Write a notes on "Primary and Secondary Standards" and "Mixed indicators".

(10)

OR

Q. 4 Write a notes on "Universal indicators and "Method for the determination of washing soda".

(10)

Q. 5 Write a note on "Complexometric titration", also outline the stability of complexes.

(10)

OR

Q. 5 Discuss the method for determination of total hardness of water samples.

(10)

Q. 6 Write a detail note on Mohr's method, also give its advantages.

(10)

OR

Q. 6 Discuss the following:

(10)

- A. Supersaturation and precipitate formation.
- B. Lyophobic colloids and lyophilic colloids.

— X —