



Sanjay Ghodawat University, Kolhapur

Established as State Private University under Govt. of Maharashtra. Act No XL, 2017

EXM/P/09/00

2019-20

Year and Program: 2019-20

School of Science

Department of Chemistry

S. Y. B.Sc. Chemistry

Course Code: CHS 203

Course Title: Basic Analytical
Chemistry

Semester – Odd (III)

Day and Date: Wednesday
27/11/19

End Semester Examination
Section-A

Time: 3 hrs, Max Marks: 100
10.30am to 11am

PRN:

Seat No:

Section A Marks out of 20:

Jr. Supervisor Sign:

Student Sign:

- Instructions:** 1) All Questions are compulsory.
2) For MCQs mark tic (✓) for correct answer. No marks for multiple tics (✓).
3) Section A should be submitted to Jr Supervisor immediately after first 30 min.

Section A

- | Q.1 | Choose the correct alternative for following. | Marks
20 | Bloom's
level | CO |
|-----|---|-------------|------------------|----|
| 1 | How many significant figures are in the number 7.0800×10^4 ? | 1 | L1 | 1 |
| | a) 6 | | | |
| | b) 3 | | | |
| | c) 5 | | | |
| | d) 2 | | | |
| 2 |is the process of collecting a small portion of the material from its large quantity which truly represents the composition of the whole material. | 1 | L1 | 1 |
| | a) chromatography | | | |
| | b) sampling | | | |
| | c) analysis | | | |
| | d) none of these | | | |
| 3 | The actual difference between the true result and the experimental value is known as | 1 | L1 | 1 |
| | a) mean | | | |
| | b) error | | | |

ESE

- c) median
- d) analysis
- 4 The error is due to the individual analyst and not connected with procedure or method is known as 1 L1 1
- a) methodic
- b) instrumental
- c) personal
- d) all of these
- 5 Average of all observations in a set of data is known as 1 L2 1
- a) median
- b) deviation
- c) mean
- d) standard deviation
- 6 A digit which denotes the amount of the quantity in the place in which it stands is known as..... 1 L2 1
- a) Absolute value
- b) relative mean deviation
- c) relative value
- d) significant figure
- 7 An acidic solution has 1 L1 2
- a) less concentration of hydrogen ions than hydroxide ions.
- b) more concentration of hydrogen ions than hydroxide ions.
- c) more concentration of hydroxide ions.
- d) equal concentrations of hydroxide and hydrogen ions.
- 8 Ca and Mg content of soils is determined by titrimetric method. 1 L1 2
- a) precipitation
- b) complexometric
- c) neutralisation

- d) redox
- 9 In chromatographic separation components of a mixture are separated by method. 1 L1 2
- a) physical
- b) Chemical
- c) biochemical
- d) electrochemical.
- 10 In paper chromatography stationary phase is 1 L1 2
- a) column
- b) liquid
- c) gas
- d) paper
- 11 In any chromatographic technique the number of phases involved in separation are 1 L1 2
- a) 2
- b) 3
- c) 0
- d) 1
- 12 In chromatography, mobile phase can be..... 1 L1 2
- a) gas or liquid
- b) solid or liquid
- c) only solid
- d) only gas
- 13 In Thin layer chromatography, the stationary phase is made of and the mobile phase is made of 1 L1 2
- a) solid, liquid
- b) liquid, liquid
- c) liquid, gas
- d) solid, gas

- | | | | | |
|----|---|---|----|---|
| 14 | Water pollution can damage | 1 | L1 | 2 |
| | a) ecosystem | | | |
| | b) habitats | | | |
| | c) food chains | | | |
| | d) all of the above | | | |
| 15 | Removal of coarse, dispersed and colloidal impurities from water are known as | 1 | L1 | 2 |
| | a) sedimentation | | | |
| | b) clarification | | | |
| | c) demineralisation | | | |
| | d) disinfection | | | |
| 16 | Preservation of food is carried out by..... | 1 | L1 | 2 |
| | a) chilling | | | |
| | b) irradiation | | | |
| | c) pasteurization | | | |
| | d) all of the above | | | |
| 17 | Removal of dissolved cations and anions from water is known as | 1 | L1 | 2 |
| | a) sedimentation | | | |
| | b) softening | | | |
| | c) demineralisation | | | |
| | d) reverse osmosis | | | |
| 18 | Food processing is generally carried out for | 1 | L1 | 2 |
| | a) preserve the nutritional value. | | | |
| | b) increase shelf life. | | | |
| | c) avoid the spoilage of food. | | | |
| | d) All of these | | | |
| 19 | Pasteurization process in which | 1 | L1 | 2 |
| | a) milk is heated at 70°C for 15-30 seconds and then | | | |



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Seat No:

Section-B

11am to 1.30pm
Section B Marks out of 80:

Section B

		Marks	Bloom's level	CO
Q.2	Answer the following questions (Solve any Two)	12		
i)	Explain the term, significant figures with suitable examples.	6	L3	1
ii)	State and explain types of errors.	6	L2	1
iii)	Explain in brief, sampling of solid, liquid and gases.	6	L2	1
Q.3	Answer the following questions (Solve any Two)	12		
i)	Define mean and median. Find out the mean of replicate determinations of chloride in a metal chloride salt if, $X_1 = 32.33$, $X_2 = 32.64$, $X_3 = 32.56$.	6	L3	1
ii)	The percentage of constituent A in a compound AB are 22.61, 22.64, 22.54, and 22.53. Calculate mean deviation and relative mean deviation.	6	L3	1
iii)	Calculate the standard deviation for a measurement in which the errors in five consecutive observations are: 0.0121, 0.025, 0.01, 0.015, 0.018.	6	L2	1
Q.4	Answer the following questions (Any Three)	12		
i)	Explain the term absolute and relative error with suitable examples.	4	L2	1
ii)	Define accuracy and precision. A titrimetric analysis gave the following seven values. 46.62, 46.47, 46.64, 46.76, 46.53, 46.60, and 46.71. Assuming the errors to be random ones, calculate the mean.	4	L3	1
iii)	Explain different methods used for determinations of pH of soil.	4	L2	1
iv)	Describe the method used for determination Ca and Mg from soil.	4	L3	1
b)	Answer the following questions (Any Two)	16		
i)	State the different causes of water pollution.	8	L2	2

ii)	List different types of chromatographic methods. How TLC technique is used in chemical analysis?	8	L1	2
iii)	Describe the methods used for food preservations.	8	L2	2
Q.5 a)	Answer the following questions (Any Two)	16		
i)	Describe the general principle involved in chromatographic separation.	8	L2	2
ii)	Discuss the functions of constituents present in cosmetics.	8	L2	2
iii)	Write note on Paper chromatography.	8	L2	2
b)	Answer the following questions (Any Two)	12		2
i)	Describe the methods used for purification of water.	6	L2	2
ii)	How is food adulteration detected?	6	L2	2
iii)	Explain the different food processing methods.	6	L3	2