



SHREE H. N. SHUKLA GROUP OF COLLEGES

(AFFILIATED TO SAURASHTRA UNIVERSITY & GTU)

2-Vaishali nagar,
Near amrapali railway crossing,
Raiya road, Rajkot- 360 001.
Ph.No.-(0281) 2440478, 2472590

3-Vaishali nagar, Near
amrapali railway crossing,
Raiya road, Rajkot- 360 001.
Ph.No.-(0281) 2224362

Behind marketing yard,
Near Lalpari lake, Between
Amargadh-Bhichri,
Rajkot- 360 002.
Ph.No. 90990 63150

M.Sc. Chemistry Internal/prelims exam

Semester II C-204 Analytical chemistry

Time: 1 hour

Date: --/--/----

Total marks: 30

Q-1 Give the answer of following questions (each question have 1 marks)

05 marks

1. Give the classification of pollutant of water and described any one of them in detailed
2. Define: Accuracy, Precision, Deviation and median
3. Explain difference between Variance and standard deviation Absolute and relative error
4. Explain Microwave assisted organic synthesis
5. Explain hardness of water. Write the chemical reactions involve in its determination water..

Q-2 Give the answer of any five out of following questions (each questions has 2 marks)

10 marks

1. Define COD. Give the chemical reaction involved in its measurements techniques. Why Ag_2SO_4 added in its measurement process.
2. How to determine sulphate present in the water, explain in brief.
3. What is alkalinity and acidity of water sample? Briefly explain its determination techniques and differentiate hydroxide, carbonate and bicarbonate alkalinity.
4. How will you analyze chloride, fluoride and sulphate in water sample? Give the name of reagents in their analysis and write the chemical reactions involves in its measurements.
5. How will you analyze ammonia, nitrate and nitrite in water sample? Give the principle and write the chemical reactions involves in its measurements.
6. Give the detailed practical process for Dissolve oxygen and Biological oxygen demand (Principle and process only).
7. Give the soil profile and how to analyze Na and K present in the soil?



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8. Explain ozone depletion with reaction mechanisms.
9. What is acid rain?
10. Explain factor responsible for smog.

Q-3 Give the answer of following questions (each questions has 5 marks)

15 marks

1. Analysis of sample of iron gave the following % values for the iron content: 7.08, 7.21, 7.12, 7.09, 7.16, 7.14, 7.07, 7.14, 7.18 and 7.11 So calculate the mean, median, standard deviation, variance and co-efficient of variance of above data
2. The soda ash sample is analysed in analytical laboratory by titration with standard HCL. The analyses performed in many replicate measurements and are given as below: 93.50%, 93.53%, 93.43%, 93.46%, 93.49%, 93.51% Find outs Confidence limits for confidence level 95 and 99% (for 95% level $t = 2.78$ and for 99% $t = 4.03$)
3. Do the following data for the spectroscopic analysis of Ti in the paints carried out from two different sources suggest a difference in composition between two materials. For that standard deviation for the analysis is known to be 0.35% Ti Sampl-1: 4.0, 4.6 % Ti Sample-2 : 4.5, 5.3, 5.5, 5.0, 4.9 % Ti So compare the analysis for 80, 95 and 99% confidence levels (for 80% $z = 1.29$, 95% $z = 1.96$ and 99% $z = 2.58$)

*****All the Best*****