

Roll No.:

Total No. of Questions : 11] [Total No. of Printed Pages : 7

PK-419

M.Sc. IV Semester Chemistry (Reg./ATKT)

Examination June 2018

ANALYTICAL CHEMISTRY

IV & V Optional (any two)

Paper - C

Time Allowed : Three Hours]

[Maximum Marks : 85

Note : Attempt all questions.

Section - A

Objective Type Questions

10×1.5=15

Q.1. Choose the correct answer:

i) How many significant figures are there in
 $0.0555 + 0.0612 + 0.1531$

- (a) 6 (b) 3
(c) 5 (d) 4

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(2)

ii) The results given by replicate determination of % of chloride in a metal chloride are

$X_1 = 32.22$, $X_2 = 32.64$, $X_3 = 32.52$,
 $X_4 = 32.46$. The mean value of chloride in the
metal chloride will be :

- (a) 32.46% (b) 32.50%
(c) 32.52% (d) None of these

iii) The most preferred method for estimation of
sodium/potassium in food samples is :

- (a) Gravimetric method
(b) Titration method
(c) Flame photometric method
(d) None of the above

iv) Which of the following food item has highest
% of water contents :

- (a) Milk (b) Butter
(c) Honey (d) Ice cream

v) Which of the following metal is not consider
as toxic even above 5 ppm in drinking water:

- (a) Mn (b) Zn
(c) Ni (d) Na

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Contd...

(3)

vi) A sample of 1 litre of water contain 80 mg of arsenic. Arsenic contents of water sample will be :

- (a) 8 ppm (b) 80 ppm
(c) 800 ppm (d) None of these

vii) Which of the following is a micro nutrient of the soil :

- (a) N (b) P
(c) Zn (d) K

viii) Which of the following Fuel contains C_5 to C_{12} hydrocarbons : <https://www.onlinebu.com>

- (a) Petroleum Gas (b) Petrol
(c) Fuel oil (d) None of these

ix) The normal value of Uric acid in human blood sample (Serum) is :

- (a) 3 to 6 mg/dL
(b) 10 to 15 mg/dL
(c) 15 to 20 mg/dL
(d) None of these

x) Which of the following is not a Narcotic drug:

- (a) Caffeine (b) Morphine
(c) Barbitone (d) Aspirin

(4)

Section - B

Short Answer Type Questions

5×5=25

Q.2. Write a note on spectroscopic methods of analysis.

OR

Briefly explain gravimetric technique used in analytical chemistry.

Q.3. How very low quantity of moisture is determined in foods like sugars, proteins etc.

OR

Write a note on food adulteration.

Q.4. How Dissolved Oxygen (DO) is determined in a water sample? Explain.

OR

Give a method of estimating fluoride contents in a sample of water. Indicate its importance.

Q.5. How moisture contents of the soil is determined? Explain.

OR

Write a note on flash point of liquid fuels.

(5)

Q.6. Briefly explain composition of blood in human beings.

OR

Write a note on Narcotics and Dangerous drugs.

Section - C

Long Answer Type Questions

5×9=45

Q.7. Give a list of various classical and instrumental methods of analysis. Discuss Importance of selecting analytical method for particular analysis. Name the analytical method you preferred for :

- a) Determination of Iron in blood sample
- b) Determination of Iron in ore sample.

OR

Giving suitable examples to distinguish between the following (any two):

- a) Precision and accuracy
- b) Absolute and relative errors
- c) Determinate and indeterminate errors

Q.8. Discuss in detail estimation of Protein or Carbohydrates in a food samples.

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(6)

OR

Explain any two of the following:

- a) Microscopic examination of foods for adulterants.
- b) Importance of Gas chromatography in analysis of food. <https://www.onlinebu.com>
- c) Importance of TLC in analysis of food.

Q.9. Write a detail note on "Heavy metal pollution and its impacts on public health."

OR

How BOD and COD in a water sample are determined? Explain its significance.

Q.10. How total Nitrogen or Phosphorous in a soil sample is determined. Indicate its significance.

OR

Discuss any two of the following:

- a) Liquid fuels and their importance
- b) Producer Gas or Water Gas
- c) Calorific value of fuels

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(7)

Q.11. Discuss estimation of Glucose or Uric acid in blood sample. Point out its importance.

OR

Write a note on screening of drugs by different methods.



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