

FYUGP

B.Sc. 1st Sem. Final Exam. / 2023

Sub- Chemistry (SEC)

Paper : Basic Analytical Chemistry

Full Marks-30

Time- 1½ hours.

1. Choose the correct answer from the followings. $1 \times 5 = 5$

a) Stalagmometer is used for the measurement of-

- i) Viscometer
- ii) Surface Tension
- iii) Wavelength
- iv) Density

b) Mobile phase used in column chromatography is-

- i) hexane
- ii) silica
- iii) Alumina
- iv) Starch

c) The equation for the operational definition of P^H at $25^\circ C$ is-

- i) $P^H = -\log [H^+]$
- ii) $-\log [OH^-]$
- iii) $P^H = \frac{E_{cu} - E^0}{0.059}$
- iv) $P^H = -\log [H_3O^+]$

d) Name the adulterant present in milk

- i) Water
- ii) starch
- iii) Urea
- iv) All of these.

e) Soil are classified according to the.....of mineral particles.

- i) shape
- ii) consistency
- iii) size
- iv) All of these.

2. Answer shortly (any five) $2 \times 5 = 10$

a) Define the term precision and accuracy with suitable example.

b) Define the term R_f

c) Give applications of gas chromatography.

d) What are different sources of errors in analytical chemistry?

e) Define pure water? Write different sources responsible for water contamination?

f) What are chelating agents? Give example.

g) Write a method for soil sampling.

(2)

- h) Describe briefly the identification of adulteration in turmeric powder.
- i) Describe briefly about mobile phase and stationary phase in Thin Layer chromatography.

3. Answer broadly (any three)

$5 \times 3 = 15$

- a) Explain one method for the estimation of metal ions from aqueous solution.
 - b) What is column chromatography. Write different types of chromatography technique with suitable example.
 - c) Explain the term preservation and adulteration in food items with suitable examples.
 - d) Describe Thin Layer chromatography (TLC). Explain the working principle of TLC.
 - e) Explain one method each for water sampling and water purification.
 - f) Describe a method for the determination of P^{II} of soil sample.
- =====