

Rayat Shikshan Santha's
Rajarshi Chhatrapati Shahu College, Kolhapur
B.Sc. (Part - III, Sem. VI) Preliminary Examination
Subject: Analytical Chemistry (Paper - XVI)

Day and Date: Saturday, 29th Feb, 2020

Marks: 40

Time: 03:00 to 05:00 pm

- Instructions:**
1. All questions are compulsory
 2. Figures to the right indicate full marks

Q.1. Select most correct alternative for each of the following and rewrite the sentences. **8 Marks**

a) In reverse phase chromatography the stationary phase is and mobile phase is in nature.

- a) polar and non-polar b) non-polar and polar c) polar and polar d) non-polar and non-polar

b) Conversion of liquid sample into small droplets in flame photometer is known as

- a) ionization b) atomization
c) vaporization d) nebulization

c) $\epsilon = k' / 2.303$, is called

- a) molar extension coefficient b) molar absorptivity
c) molar absorption index d) all of these

d) The determination of eq. point by plotting $\Delta E / \Delta V$ vs. volume of titrant (V) is known as method.

- a) second derivative b) first derivative
c) classical method d) none of the above

e) pH range of methyl orange indicator is.....

- a) 4.2-6.3 b) 5-8
c) 2.9-4.6 d) 8-11

f) According to Ostwald acid-base indicators are either

- a) weak organic acids only b) weak organic bases only
c) weak inorganic acids only d) weak inorganic bases only

g) Paper chromatography is a type of chromatography.

- a) partition b) adsorption
c) ion exchange d) affinity

h) Stable compound formation is a interference in flame photometer.

- a) physical b) spectral
c) matrix effect d) chemical

Q.2. Attempt the following. (any 2) **20 Marks**

a) Mention the four examples of acid base indicators and explain the choice of an indicator for titration between strong acid and weak base with the help of neutralization curve.

b) Describe construction and working of glass electrode. Discuss its use in determination of pH of solution.

c) Mention different types of chromatography. Explain in detail gas chromatography.

Q.3. Write short note on. (any 3) **12 Marks**

a) General principle of chromatography

b) Interferences in flame photometry

c) Precipitation titration

d) Theory of metal ion indicator

e) Photovoltaic cell