Instruction to Candidates:
1) Section - A is compulsory.
2) Attempt any Four questions from Section - B.
3) Attempt any Three questions from Section - C.

Section - A

Q1) (15 x 2 = 30)

a) Explain the term ‘Accuracy’?

b) Explain the hydrolysis of salts of strong acid and weak base?

c) Define ‘Molarity’ and Explain how do you prepare 1 molar NaOH solution?

d) Differentiate between primary and secondary standard solutions?

e) Explain Bronsted acid-base theory?

f) What is buffer solution? Explain briefly the importance of buffer solutions in pharmacy?

g) Define common ion effect and give its practical importance?

h) Explain the concepts of PPM and PPB?

i) Write notes on universal indicators?

j) Explain briefly the preparation and standardization of N/10 KMnO₄?

k) Differentiate between internal and external redox indicators?

l) Write notes on digestion and peptisation?

m) Discuss the organic precipitants in gravimetry?
n) Explain how do you determine calcium as calcium oxalate by gravimetry.

o) Define standard deviation and give its formula.

Section - B

Q2) Explain systematic and random errors with suitable examples.

Q3) Explain briefly the concept of post precipitation?

Q4) Write notes on buffer action and give the significance of Henderson and Hesselbach equation?

Q5) Discuss the theory of redox titrations?

Q6) Discuss the classification of chemical reactions involved in volumetric analysis?

Section - C

Q7) What are neutralization curves? Explain the titration curves of strong acid and strong base?

Q8) Discuss the basic steps involved in gravimetry?

Q9) Explain how the end point is detected in redox titrations?

Q10) Discuss various sampling techniques used in pharmacy?