TB171140E

Reg. No.....

Name.....

B. Sc. DEGREE (C.B.C.S.S) EXAMINATION, OCTOBER 2018
(2015 & 2016 Admission Supplementary and 2017 Improvement / Supplementary)
SEMESTER I - COMPLEMENTARY COURSE (CHEMISTRY)
CH1C01TB - BASIC THEORETICAL AND ANALYTICAL CHEMISTRY
(Common for Botany, Homescience & Zoology)

Time: Three Hours **Maximum Marks: 60**

PART A

I. Answer all questions. Each question carries 1 mark

1. pH + pOH = ----------
2. R_f value is --------
3. The process of recovery of the constituents from the chromatogram is known as----------
4. Name an indicator used in complexometric titrations.
5. The lowest energy state of an atom is called .....

(5 × 1 = 5)

PART B

II. Answer any five questions. Each question carries 2 marks

6. How do you determine strength of acids and bases?
7. What is meant by common ion effect? Mention two of its applications
8. What is the principle of paper chromatography?
9. What is sublimation? Give two sublimating substances.
10. What is the principle of fractional distillation?
11. Distinguish between iodometry and iodimetry.
12. Give any two ways for minimizing systematic errors.
13. Give Pauli's exclusion principle.

(5 × 2 = 10)

PART C

III. Answer any five questions. Each question carries 5 marks

14. What is a buffer solution? Describe with an example, how a solution of a weak acid and its salt with a strong base behaves as a buffer solution
15. Compare Lowry-Bronsted and Lewis concept of acids and bases with examples. Explain merits and demerits of each.
16. Discuss the principle and application of column chromatography
17. Explain the principle and technique of a) steam distillation b) distillation under reduced pressure
18. For each set calculate (i) mean (ii) median (iii) standard deviation

A	B	C	D	E	F
3.5	70 24	0.812	2.7	70.65	0.514
3.1	70.22	0.792	3.0	70.61	0.503
3.3	70.10	0.794	2.6	70.64	0.486
2.5	70.11	0.900	2.8	70.21	0.497

19. What are the different types of titrations?
20. Distinguish between orbit and orbital.
21. Write a note on Hund's rule and Aufbau principle. Give the electronic configuration of copper

(5 × 5 = 25)

PART D

IV. Answer any two questions. Each question carries 10 marks

22. (a) Write a note on (i) filtration (ii) recrystallisation
    (b) Describe the different concentration terms
23. What is chromatography? Give an account of i) Thin layer chromatography ii) ion-exchange chromatography
24. Write an explanatory note on quantum numbers. What is their significance?
25. Describe briefly the various steps in gravimetric analysis

(2 × 10 = 20)