**QP CODE: 18103624**

18103624

**Reg No** : .....

**Name** : .....

# B.Sc.DEGREE(CBCS)EXAMINATION, DECEMBER 2018

**First Semester**

**Core Course - CH1CRT01 - GENERAL AND ANALYTICAL CHEMISTRY**

(Common to B.Sc Chemistry Model I, B.Sc Chemistry Model II Industrial Chemistry, B.Sc Chemistry Model III Petrochemicals)

2018 Admission only

C54A1EF4

**Maximum Marks: 60** **Time: 3 Hours**

## Part A

Answer any **ten** questions.

Each question carries **1** mark.

1. Write the chronological categories in the origin of modern chemistry.
2. "Theory and experiment are mutually dependent in chemistry". Justify this statement.
3. What is the difference between polarising power and polarisability?
4. Write Mulliken's formula of calculating electronegativity.
5. Define molar mass?
6. What is ppm?
7. Suggest any two indicators for redox titrations.
8. What is the purpose of a basic basic buffer solutions in metal ion - edta titrations?
9. How would you prevent peptisation?
10. List two applications of thin layer chromatography.
11. List any two advantages of high performance liquid chromatography.
12. What are the different types of graphs used to present analyzed data in scientific communications?

(10×1=10)

## Part B

Answer any **six** questions.

Each question carries **5** marks.

13. What are software models ? How can we differentiate between static and dynamic models?
14. Write a note on nanotechnology

15. Give a brief account on long form of periodic table?

16. What is ionisation energy? What are the factors affecting ionisation energy?

17. *100 mL of 0.010M $Pb(NO_3)_2$ is mixed with 100mL of 0.010 M KF. Will a precipitate of $PbF_2$ form?*

    *Ksp for $PbF_2$ is $7.18 \times 10^{-7}$ .*

18. Briefly explain the principles of acid-base titrations with the help of different titration curves.

19. Write a note on crystallization.

20. What is elution? How can it be done in column chromatography?

21. What is the principle involved in demineralization of water?

(6×5=30)

**Part C**

Answer any **two** questions.

Each question carries **10** marks.

22. "Revision of scientific theories are essential when it is unable to dealt with new situations." Justify this statement by takingatom model as an example.

23. (a) What are the requirements of a primary standard?

    (b) *Calculate the number of moles and amount in grams of NaOH in 250 $cm^3$ of 0.2 M NaOH solution.*

24. Discuss the principle, instrumentation and applications involved in Gas chromatography.

25. Give an account of the statistical treatment of analytical data.

(2×10=20)