Time: 1.5 hrs   **Marks: 40**

1. Who discovered the term Chromatography?   1
2. Answer the following   1
    a) Mathematical expression for pH is _____
3. Why Chromatography is important?   2
4. How would you determine the detection of foreign resin in asafoetida   2
5. What is stationary phase and mobile phase in Chromatography?   2
6. What is the role of polar and non-polar solvent in determining the retention time in Chromatography?   3
7. What the procedure for measuring dissolved oxygen for a water sample.   3
8. Answer **any two** of the following: 2x2=4
    a) Write about the sources responsible for contaminating water.
    b) Write about the methods for purification of water.
    c) Prepare 100 ml 0.05 N NaOH solution.
9. Answer **any three** of the following questions briefly: 3x2=6
    a. Define food processing? What are the objectives of food processing?
    b. What is adulteration? What are the detection techniques to determine of adulteration in coffee?
    c. What are the adulterants present in a) Coriander powder b) Hing c) Chilli powder
    d. Why should you not buy shining pulses from the market?
10. Answer any four of the following.   2×4=8
    a) Define various methods used in analytical chemistry.
    b) Write down the differences between qualitative and quantitative analysis.
    c) What is concept of sampling? What are important terms involved with this?
    d) Write down the differences between random and non- random sampling.
    e) Define accuracy and precision with examples.
    f) Write down four rules to find out significant figure.
11. Answer any two   4x2=8
    a) What is soil pH? Why it is important? How can we change soil pH?
    b) What is complexometric titration? What are the common indicators used for complexometric titration? Write basic principle of complexometric titration with EDTA.
    c) How Calcium and magnesium ions present in soil sample can be determined by complexometric titration? Explain the principle and procedure.

**************************************ALL THE BEST*********************************