School of Environment & Natural Resources
M.Tech. (Environmental Technology) *sumfer DST*
Course: ETC: 550 Basic Instrumentation in Environment Science and Engineering

Time: 2.00 h   **Total Marks: 30**

Section A: 10 marks

Attempt any 10 question (each carry 1 marks)

1. Name one Classical technique for each Separation, Quantitative and Qualitative analysis

2. Flame test is a .... technique.

3. Write one source of determinate error.

4. Name three Acid-Base theories.

5. The conductance C, of a salt solution ...., with its dilution.

6. The intensity of transmitted light is observed in .... technique.

7. The 'Glass Electrode' is used for.

8. Which two acids are used in Kjeldahl analysis?

9. What is the TDS of fresh water in ppm?

10. Write the name of a Complexing agent?

11. How can you correct a determinate error?

Section B: 10 marks

Attempt any five questions (each carry 2 marks). Answer within 100 words.

1. If, 500 ml of a solution contains 24.5 g H_2SO_4 the molarity and normality are.

2. What are conjugated acid-base pair. Give one example.

3. What are the Complexometric titrations?

4. Write a relation for standard deviation.

5. Calculate the weight of Na present in 50.0 g of Na_2SO_4.

6. What is the difference between Qualitative and Quantitative Analytical technique? Explain with examples.

Section C: 10 marks

Attempt any two questions. (Each carry 5 marks). Answer within 200 words.

1. What is Conductometry? And what are the factors affected the conductance of a solution.

2. What are buffers? Explain different type of buffers with example.

3. The tin and zinc contents of a brass sample are analyzed with the following results: (a) Zn: 33.27, 33.37, and 33.34% and (b) Sn: 0.022, 0.025 and 0.026%. Calculate the standard deviation in each analysis.