UUCMS. No. | | | | | | | | | | | |

B.M.S. COLLEGE FOR WOMEN
BENGALURU – 560004

I SEMESTER END EXAMINATION-APRIL – 2024

M.Sc. CHEMISTRY - ANALYTICAL CHEMISTRY
(CBCS Scheme-F+R)

Course Code: MCH104T **QP Code: 11010**
Duration: 3 Hours **Max. Marks: 70**

Instruction: Answer Question No. 1 and any FIVE of the remaining.

1. Answer any *TEN* questions. **(2×10=20)**

a) What are material safety data sheets? Give its significances.
b) Mention the method of handling liquid bromine.
c) What are the differences between accuracy and precision?
d) Phenolphthalein gives pink in colour in basic medium. Give reason.
e) Write any four differences between qualitative and quantitative analysis.
f) Define the terms co-precipitation and post-precipitation.
g) Double beam instrument is superior to single beam instrument. Give reason.
h) Define the terms molar absorptivity and sandell's sensitivity.
i) Give the limitations of Beer-Lambert's law.
j) Differentiate between Distribution ratio and Distribution coefficient.
k) TLC is superior to other types of chromatographic techniques. Justify.
l) What is retention time? Mention its significance.

2. a) Explain safety measures in chemical laboratories.
b) What are F-test, Q-test and t-test? .Write their Significance. **(5+5=10)**

3. a) Describe Acid-Base titration with taking suitable example.
b) Write a short note on masking and damasking agent. **(5+5=10)**

4. a) Write a short note on i) Ringbom plot ii) Beer-Lambert's law.
b) Explain instrumentation and principle of visible spectrophotometer **(5+5=10)**

5. a) Discuss analytical column and guard column in HPLC.

b) Substances A and B were found to have retention time of 17.30 and 19.92 minutes respectively on a 25.0 cm column. The width (at the base) for A and B were 1.10 and 1.22 minutes respectively. Calculate resolution, the average number of plates in the column. **(5+5=10)**

6. a) Write a note on handling and storage of acid and bases.

b) Explain the absolute and relative error with an example.

c) What are the criteria for the selection of indicators? **(4+3+3=10)**

7. a) What are precipitating agents? Mention the significance of DMG in inorganic analysis.

b) Derive Beer's lamberts law. Mention its limitations.

c) Compare standard addition and internal standard addition methods. **(4+3+3=10)**

8. a) Discuss batch and continuous extraction methods.

b) Explain two-dimensional paper chromatography and mention its significance.

c) Briefly explain the various measures taken for the disposal of chemicals.

(4+3+3=10)

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