Reg. No.														

M.Sc. DEGREE EXAMINATION, MAY 2022

Fourth Semester

18PCY402 – ANALYTICAL CHEMISTRY

(For the candidates admitted during the academic year 2018-2019 onwards)

Time: Three hours Max. Marks: 100

PART – A (5 × 5 = 25 Marks)

Answer **ANY FIVE** Questions

1. Write the principles, objectives and importance of GLP.
2. What are the safety precautions to be taken in Laboratory to avoid accidents?
3. Define oxidizing and reducing agent with examples.
4. Calcium Carbonate ($CaCO_3$) has a solubility in water of 0.0180 g/litre at 25°C. Calculate the K_{sp} of $CaCO_3$. [Molecular Weight = 100.1g per mole]
5. Explain column chromatography with diagram.
6. Discuss about the solvent extraction method.
7. What are electrochemical sensors? Give few examples.
8. Explain the thermometric titration.

PART – B (5 × 15 = 75 Marks)

9. a. Explain the Criteria for rejection of data.

(OR)

b.i. Explain the following terms:
Accuracy, Precision, Specificity and Selectivity. (8 Marks)

ii. Define standard reference materials and its applications. (7 Marks)

10. a.i. Discuss about the different theories and choice of indicators. (10 Marks)

ii. What is volumetric analysis? Give an example for the preparation of strength of given substance. (5 Marks)

(OR)

b.i. Describe the theory of precipitation. (8 Marks)

ii. Explain the Ostwald and Quinonoid theory with an example. (7 Marks)

11. a. Describe the working principle, Instrumentation and applications of gas chromatography.

(OR)

b.i. Explain the principle of Ion-exchange Chromatography and its applications. (10 Marks)

ii. Explain Thin Layer Chromatography with diagram a neat diagram. (5 Marks)

12. a. Discuss about the cyclic voltammetry with diagram.

(OR)

b. Describe the principle, instrumentation and applications of polarography.

13. a. Explain about the working principle, Instrumentation and applications of TGA.

(OR)

b. Explain the principle, Instrumentation and applications of DTA.

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