

PD-495 CV-19
(534) M.Sc. Chemistry (Fourth Semester)
Examination June 2021
ANALYTICAL CHEMISTRY
Paper - IV

Time : Three Hours]

Maximum Marks : 80

Minimum Passing Marks :

नोट : दोनों खण्डों से निर्देशानुसार उत्तर दीजिये। प्रश्नों के अंक उनके दाहिनी ओर अंकित हैं।

Note : Answer from both the Sections as directed. The figures in the right hand margin indicate marks.

SECTION – A

[1 X 10]

1. Answer the following objective type questions :-
 - a. Why are analytical methods important?
 - b. Write one step for calibration of glasswares.
 - c. Define standard deviation.
 - d. What are the causes of food adulteration?
 - e. What is the full form of HPLC.
 - f. Write the name of two water pollutants.
 - g. What is Hard Water?
 - h. How much Moisture Content is Present in Soil?
 - i. Define B.O.D.
 - j. What is the optimum pH for soil?

2. Answer the following questions :-

[2 X 5]

- a. Differentiate accuracy from Precision.
- b. Write any two important safety in the analytical Laboratory.
- c. What is a Calibration Curve?
- d. What are the advantages of HPLC?
- e. What do you understand by the term "Calorific Value"?

SECTION – B

Answer the following questions :-

[12 X 5]

UNIT-I

3. (a) Describe the principle of the analytical balance.
(b) What do you understand by the term weighing by difference?

Or

What do you mean by Laboratory note book? How can you maintain it in the Lab? What are the precautions to be taken while preparing the solution in the Lab? Explain briefly.

UNIT-II

4. Discuss the various method used to minimize error in the analysis.

Or

Calculate the mean and standard deviation of the following set of analytical values :-

12.96, 13.05, 12.81, 12.75

UNIT-III

Write notes on the following :-

- (a) Crude Protein and Crude Fiber.
- (b) Pesticide analysis in food products.

Or

What is Gas Chromatography? Explain it in detail for organophosphates.

UNIT-IV

What is water pollution? Where does it come from? Explain also the most common causes of water pollution.

Or

Explain briefly the following :-

- (a) Heavy metal pollution.
- (b) Acidity and Alkalinity of water.

UNIT-V

Write about total nitrogen in soil? Describe its method in detail for soil.

Or

What is liquid fuel? How can you determine the flash point and aniline point of liquid fuel? Explain in detail.