

SEMESTER EXAMINATION-2021

CLASS – M.SC. 3RD SEM

SUBJECT- CHEMISTRY

PAPER CODE: MCH-C301

PAPER TITLE: Analysis of Water and Waste Water

Time: 3 hour

Max. Marks: 70

Min. Pass: 40%

Note: Question Paper is divided into two sections: **A and B**. Attempt both the sections as per given instructions.

SECTION-A (SHORT ANSWER TYPE QUESTIONS)

Instructions: Answer any five questions in about 150 words (5 X 6 = 30 Marks) each. Each question carries six marks.

Question-1: Write a few lines on importance of colour and odour in monitoring water samples.

Question-2: What types of containers are needed for the sampling of COD, fluoride, nitrate and total organic carbon?

Question-3: Define the dissolved oxygen of a water sample.

Question-4: Write a short note on Residual Chlorine.

Question-5: What do we understand by the electrical conductivity of a solution?

Question-6: Write a short note on the variation of alkalinity and acidity on pH scale with diagram.

Question-7: What do you understand by the pH of a solution, how it can be determined.

Question-8: Give the chemical formula of the following-

- (i) Sodium thio sulphate
- (ii) Sulfanilamide reagent
- (iii) Nessler's reagent
- (iv) EDTA
- (v) Alum
- (vi) Ethyl orange

Question-9: Differentiate between temporary and permanent hardness.

Question-10: Write a note on preparation of culture media and nutrient agar.

SECTION-B (LONG ANSWER TYPE QUESTIONS)

Instructions: Answer any FOUR questions in detail. Each (4 X 10 = 40 Marks) question carries 10 marks.

Question-11: Explain the experimental procedure for the estimation of

Biochemical Oxygen Demand.

Question-12: Discuss the determination procedure of Chemical Oxygen Demand in waste-water with reactions.

Question-13: What are carbonate, Bicarbonate and Hydroxide Alkalinity? Also write the experimental procedure to determine the total Alkalinity in a water sample.

Question-14: Write a note on sampling and storage of water sample.

Question-15: Write a note on potentiometric determination of lead in water.

Question-16: Write a note on Polarography.

Question-17: Write a note on Voltammetry.

Question-18: Write a detailed note on water pollution and effluent treatment.