JAZ-003-010309 Seat No. _____

M. Sc. (Sem. III) (CBCS) Examination

December – 2019

Chemistry : Paper-CPA-303

(Analytical Chemistry)

(Advance in Environmental Chemistry)

(Old Course)

Faculty Code : 003
Subject Code : 010309

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

Instructions :

(1) All questions are compulsory.

(2) All questions carry equal marks.

1 Answer the following : (any **seven**)

(a) Define : Equalization, Proportioning and volume reduction.

(b) Explain : Organic colloidal solids and disperse growth aeration.

(c) Discuss the cold-lime soda process for water purification.

(d) Explain the effects of various pollutants on river water.

(e) Give the classification of waste-water.

(f) List the commonly used absorbents in air pollution control.

(g) Mention the name of techniques used in collection of particulate pollutants.

(h) What is carbon credit ? How it is used ?

(i) Briefly discuss the collection method of solid waste.

(j) Define : Nitrogenous oxygen demand and activated sludge.

2 Answer the following : (any **three**)

(a) What are organic pollutants ? Give their name and effects on environment categories inorganic pollutants.

(b) Give the sources of industrial waste water and briefly explain its treatment.

(c) How will you analyze NOx and SOx pollutants.

(d) List the sources of radioactive and pesticidal pollutants in water.

3 Answer the following :

(a) Write a note on instrumental techniques for air pollutants analysis.

(b) Give the name of particulate control equipments. Discuss any two of them in detail.

OR

3 (a) Write a note on conventional waste water treatment processes.

(b) Describe the sources, characteristics and effects of effluents from textiles industries.

4 Answer the following : (any **two**)

(a) Write a note on compliance carbon market.

(b) Describe trickling filter and sedimentation process.

(c) Write a note on control of pollutant emit from automobile sources.

5 Answer the following : (any **two**)

(a) How will you analyze H_2S and ozone by spectrophotometrically.

(b) (i) Where do carbon credits come from ?

(ii) Why should a business consider carbon offsetting ?

(c) Discuss the sources, characteristics and effects of effluents from pulp and paper industries.

(d) What are thermal pollutants in water ? Discuss their effects on aquatic ecosystem.