

Roll No.

DD-761

M. Sc. (Fourth Semester) EXAMINATION, 2020

CHEMISTRY

Paper Fourth (CH—22)

(Environmental and Applied Chemical Analysis)

Time : Three Hours

Maximum Marks : 80

Note : Attempt all the *four* questions, by selecting *one* question from each Unit. All parts of questions should answer in one place. Be precise and to the point in your answers. Figure in right hand side are marks.

Unit—I

1. (a) Write tolerance limit of NO_x , SO_x , PM_{10} , O_3 , Pb and Hg. 6
- (b) What are POPs ? Describe application, toxicity and biodegradation of hexochlorobenzene. 8
- (c) What is black carbon ? Discuss its role in the climate change. 6

Or

- (a) Explain the following terms : 6
Haze, Smog and Smoke

P. T. O.

- (b) What is Photochemical Smog ? How is it formed in the atmosphere ? 8
- (c) Write a note on significance of air quality standards. 6

Unit—II

2. (a) Discuss in the brief the environmental impact of steel plant. 6
- (b) Describe in brief the principles of methodology of water treatment method. 8
- (c) Explain the following terms : 6
Alkalinity, BOD and hardness

Or

- (a) Discuss the causes and health hazards of fluorosis. 6
- (b) What are water standards ? Describe the bacteriological and irrigation standards of water. 8
- (c) Write a note on biodegradation of pesticides. 6

Unit—III

3. (a) What are food additives ? Which chemicals are widely used as food additives ? 6
- (b) Discuss general constituents of foods. What are proximate constituents and how will they analyse ? 8
- (c) Discuss the methodology used for analysis of protein. 6

Or

- (a) Highlight in brief the main chemical constituents of cereals or milk. 6
- (b) Discuss the principle and methodology of GC method used for quantification of Vitamins. 8
- (c) Write a note on food safety. 6

Unit—IV

4. (a) Describe analytical method of analysis for ammonia and nitrogen. 6
- (b) What are cosmetics ? Discuss in brief the different kinds of cosmetic used. 8
- (c) What are enzymes ? Discuss the specific role of the following enzymes : 6
- Lactate and Lipase.

Or

- (a) Write a note on cosmetic formulation and cosmetic colours. 6
- (b) Describe the concept and principle of one analytical method used in clinical laboratory. 8
- (c) Discuss the method of analysis of cholesterol. 6