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**UNIT-II**

**Q. 2.** Explain geo-biochemical impact of municipal solid wastes.

**OR**

Describe about control devices of water pollutants.

**UNIT-III**

**Q. 3.** Explain HPLC technique for analysis of organic phosphates in food products.

**OR**

Describe TLC technique for identification of pesticides in food products.

**UNIT-IV**

**Q. 4.** Explain the concepts and principles of analytic methods commonly used in the clinical species Calcium, Glucose and Iron.

**OR**

(a) Explain Ultimate analysis of coal.

(b) 2.58 g sample of coal was kjeldahlized and  $\text{NH}_3$  gas thus evolved was absorbed in 50 ml of 0.1 N  $\text{H}_2\text{SO}_4$ . After absorption, the excess acid required 12.50 ml of 0.1 N NaOH for exact neutralization.

3.80 g of the coal sample in a quantitative analysis gave 0.2115 g of  $\text{BaSO}_4$ . Calculate the percentage of N and S in the coal.

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ROLL NO.....

**CHE. 404/21**

**IV SEMESTER EXAMINATION, 2021**

**M.Sc. (CHEMISTRY)**

**PAPER-IV**

**ENVIRONMENTAL & APPLIED CHEMICAL ANALYSIS**

**TIME: 3 HOURS**

**MAX.- 80**

**MIN.- 16**

**Note:** The question paper consists of three sections A, B & C. All questions are compulsory.

**Section A-** Attempt all multiple choice/answer in one word questions.

**Section B-** Attempt one question from each unit.

**Section C-** Attempt one question from each unit.

**SECTION 'A'** **2 × 8 = 16**

**Multiple Choice Questions/ Answer in one word**

- D. D. T. causes  
(a) Air Pollution (b) Air and Soil Pollution  
(c) Air, Water and Soil Pollution (d) Air and Water Pollution
- Which of the following is a secondary air pollutant  
(a) SPM (b) PAN (c)  $\text{SO}_2$  (d)  $\text{NO}_2$
- The organic material of the solid wastes will decompose  
(a) By the flow of water (b) By the soil particles  
(c) By oxidation (d) By the action of microorganisms

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4. Full form of RCRA is  
(a) Resource Conservation and Recovery Advise  
(b) Resource Conservation and Recovery Act  
(c) Resource Community and Recovery Act  
(d) Resource Conservation and Reuse Act
5. Mollisch's Test is used for detection of  
(a) Protein (b) Lipid (c) Lipid (d) Carbohydrates
6. Baudouin test detect the presence of  
(a) Adulteration in Ghee (b) Adulteration in turmeric  
(c) Adulteration in Pulses (d) Adulteration in Honey
7. Benzodiazepines are the most widely used drug  
(a) Narcotic (b) Tranquilizers (c) Hypnotics (d) Sedatives
8. Which of the following is best fuel in terms of calorific values  
(a) Hydrogen (b) Methane (c) Ethane (d) Butane

**SECTION 'B'**  $4 \times 6 = 24$

**Short Answer Type Questions (Word limit 200-250 words.)**

**UNIT-I**

- Q. 1.** Write short notes on -  
(a) Air Quality Standard and Index  
(b) Green House Effect

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**OR**

Explain the classification of air pollution monitoring.

**UNIT-II**

- Q. 2.** Explain COD.

**OR**

Write note on Steel Plant Effluent.

**UNIT-III**

- Q. 3.** Explain pesticide analysis in food products.

**OR**

Explain the common food adulterants.

**UNIT-IV**

- Q. 4.** Differentiate between Narcotic and Non – Narcotic drugs.

**OR**

Write notes on Flash and Fire Point of fuels.

**SECTION 'C'**  $4 \times 10 = 40$

**Long Answer questions (Word limit 400-450 words.)**

**UNIT-I**

- Q. 1.** Describe the monitoring and analysis of air borne pollutants SO<sub>2</sub>, Pb, CO<sub>2</sub> and NO<sub>x</sub>.

**OR**

Write notes on

- (a) Scrubber Technique (b) Global Warming

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P.T.O.