C. U. SHAH UNIVERSITY
Summer Examination-2022

Subject Name : Industrial Analytical Chemistry

Subject Code : 5SC03IAC1   **Branch: M.Sc. (Chemistry)**

Semester: 3   **Date: 21/04/2022**   **Time: 02:30 To 05:30**   **Marks: 70**

Instructions:
   (1) Use of Programmable calculator and any other electronic instrument is prohibited.
   (2) Instructions written on main answer book are strictly to be obeyed.
   (3) Draw neat diagrams and figures (if necessary) at right places.
   (4) Assume suitable data if needed.

SECTION – I

Q-1   **Attempt the Following questions (1 Mark *7=7)**   **(07)**
   a. What do you mean by automatic instruments?
   b. Define process analytical chemistry
   c. What can be determined from the food sample by the dye-binding method?
   d. What do you mean by on-line analysis?
   e. What is known as Iodine value?
   f. Define food analysis
   g. Give examples of water and fat-soluble vitamins.

Q-2   **Attempt all questions**   **(14)**
   a   Discuss the principle and instrumentation of flow injection analysis.   **10**
   b   Explain the determination of the saponification value.   **4**
                                    OR
Q-2   **Attempt all questions**   **(14)**
   a   Discuss the discrete analyzers and sampling devices in detail.   **10**
   b   Discuss any two factors affecting dispersion in flow injection analysis.   **4**

Q-3   **Attempt all questions**   **(14)**
   a   Explain the Kjeldahl method for the determination of protein content in food. **5**
   b   Discuss the six major constituents in food analysis.   **5**
   c   Write a note on the determination of starch and cane sugar from the milk sample. **4**
                                    OR
Q-3   **Attempt all questions**
   a   Discuss the methods for the determination of vitamin A and C.   **5**

b	Discuss the regulations and internal standards for food analysis.	**5**
c	Write a note on the nutritional labeling of food.	**4**

SECTION – II

Q-4   **Attempt the Following questions (1 Mark *7=7)**   **(07)**
- **a.** Define pesticides.
- **b.** Write the full form of TFM and NPK.
- **c.** Define compound fertilizers.
- **d.** Give the wavelength for determination of Aldrin.
- **e.** What is called Micelle?
- **f.** What is known as an anti-diabetic drug?
- **g.** Give any two names of detectors used with HPLC.

Q-5   **Attempt all questions**   **(14)**
a	Discuss the classification of fertilizers.	**7**
b	Explain the analysis of (i) BHC and (ii) Malathion.	**7**

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OR

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Q-5   **Attempt all questions**
a	Discuss the analysis of antimalarial drugs with one example.	**7**
b	Write a note on the analysis of (i) Dieldrin and (ii) Parathion.	**7**

Q-6   **Attempt all questions**   **(14)**
a	Explain the analysis of antidiabetic drugs with one example.	**7**
b	Discuss the classification of detergents in detail.	**7**

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OR

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Q-6   **Attempt all Questions**
a	Discuss heavy metal ion analysis in pharmaceuticals.	**7**
b	Discuss the determination of potassium from fertilizers. Give any two effects of fertilizers.	**7**