

C. U. SHAH UNIVERSITY

Winter Examination-2022

Subject Name: Advanced Chemistry

Subject Code: 5SC03ADC1

Branch: M.Sc. (Chemistry)

Semester: 3

Date: 24/11/2022

Time: 11:00 To 02:00

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.
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SECTION – I

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|------------|---|-------------|
| Q-1 | Attempt the Following questions. | (07) |
| | a. Give any two examples of chromophore. | 01 |
| | b. Define the terms aergel and xerogel. | 01 |
| | c. Draw the chemical structure of Aurin. | 01 |
| | d. Define Nanotechnology. | 01 |
| | e. Write any two names of triphenyl methane dye. | 01 |
| | f. What is the meaning of sensation of color? | 01 |
| | g. Give the structure of Chrome violet. | 01 |
| Q-2 | Attempt all questions | (14) |
| | a. Discuss the preparation of Alizarin in detail. | 05 |
| | b. Write a note on the types of nanomaterials. | 05 |
| | c. Explain the preparation of nanomaterial using any one top-down method. | 04 |
| OR | | |
| Q-2 | Attempt all questions | (14) |
| | a. Discuss the classification of dyes in detail. | 07 |
| | b. Give the complete synthesis of Diamond Black F and Malachite Green. | 07 |
| Q-3 | Attempt all questions | (14) |
| | a. Explain the synthesis and uses of methyl violet and crystal violet. | 07 |
| | b. Discuss the sol-gel and electro-deposition. | 07 |
| OR | | |
| Q-3 | Attempt all questions | |
| | a. Give the applications of nanomaterials. | 06 |
| | b. Write a note on carbon nanotube. | 04 |
| | c. Discuss the preparation of Indigotin by the commercial method. | 04 |



SECTION – II

- Q-4 Attempt the Following questions. (07)**
- a. What do you mean by photocatalyst? **01**
 - b. Draw the structure of Urethane. **01**
 - c. What is known as polymer-supported catalysts? **01**
 - d. Define Green Chemistry **01**
 - e. Write the full names of QSPR and QSAR. **01**
 - f. Define the term Cheminformatics **01**
 - g. Define polymer and polymerization. **01**
- Q-5 Attempt all questions (14)**
- a. Discuss the advantages and limitations of microwave chemistry. **07**
 - b. Write a note on Intellectual Property Rights. **07**
- OR**
- Q-5 Attempt all questions (14)**
- a. Write a note on green synthesis of polycarbonate. **07**
 - b. Explain phase transfer catalyst in detail. **07**
- Q-6 Attempt all questions (14)**
- a. Write synthesis of Ibuprofen through conventional and green route. **07**
 - b. Discuss the uses of chemo-informatics. **07**
- OR**
- Q-6 Attempt all Questions (14)**
- a. Discuss the principles of green chemistry. **07**
 - b. Explain the synthesis of Paracetamol through green synthesis route. **04**
 - c. Write different aspects of computational chemistry. **03**

