

# C. U. SHAH UNIVERSITY

## Winter Examination-2021

Subject Name: Heterocyclic Chemistry

Subject Code: 5SC03HTC1

Branch: M.Sc. (Chemistry)

Semester: 3

Date: 15/12/2021

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.
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### SECTION – I

- Q-1**                      **Attempt the Following questions**                      **(07)**
- Define: Heterocyclic compounds.                      01
  - Draw the structure of uracil and thiamine.                      02
  - What the prefix suggests in heterocyclic compounds?                      01
  - Draw any two structures of four membered saturated heterocyclic compounds.                      01
  - Write down the prefix name used for S and As.                      01
  - What is the suffix for unsaturated five membered compound having nitrogen?                      01
- Q-2**                      **Attempt all questions**                      **(14)**
- Write a note on Thiirane.                      07
  - Write a ring opening reaction of Oxetane.                      07
- OR**
- Q-2**                      **Attempt all questions**                      **(14)**
- Write down the synthesis methods of Azetidines.                      05
  - Give the ring opening reaction of Thirane.                      04
  - Write a note on Azirine.                      05
- Q-3**                      **(14)**
- Discuss the pyrazole heterocycle.
- Q-3**                      **Attempt all questions**                      **(14)**
- OR**
- Explain the preparation and physical properties of Pyrrole.                      05
  - Discuss the electrophilic substitution reactions of Furan.                      05
  - Explain the paal knorr synthesis for Thiophene.                      04



**SECTION – II**

- Q-4**                    **Draw the structures of following heterocycles.**                    **(07)**
- a. Isobenzofuran                    01
  - b. Dithiazine                    01
  - c. Thirine                    01
  - d. Coumarin                    01
  - e. Anthranilic acid                    01
  - f. Pyrilium salt                    01
  - g. Quinoline                    01
- Q-5**                    **Attempt all questions**                    **(14)**
- a. Write a note on Pyrimidine.                    07
  - b. Write a note on Benzimidazole.                    07
- OR**
- Q-5**                    **Attempt all questions**                    **(14)**
- a. Write a note on Pyridine.                    07
  - b. Explain the chemical properties of Quinazoline.                    07
- Q-6**                    **Attempt all questions**                    **(14)**
- a. Write the synthesis methods of Indole.                    05
  - b. Explain the preparation and chemical properties of Benzoxazole.                    05
  - c. Write a note on Pyridazine.                    04
- OR**
- Q-6**                    **Attempt all Questions**
- a. Write the synthesis methods for imidazole and thiazole.                    07
  - b. Write a note on Cinnoline.                    07

