

M.Sc. Semester - 3 (CBCS) Examination
DEC/JAN. - 2020 [OLD COURSE]
HETEROCYCLIC CHEMISTRY(CORE)

Time: 1:30 Hours

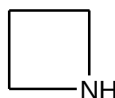
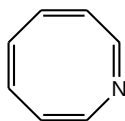
Marks: 42

Instructions:

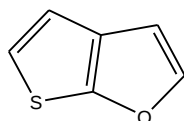
1. Figure to the right indicate marks.
2. There are five questions in the question paper.
3. Answer any three of the following questions.

Q.1 Answer any seven of the following questions: (14)

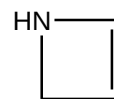
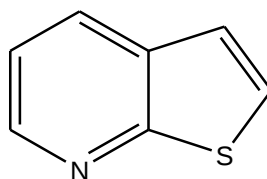
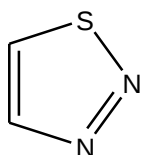
- i) Name the prefixes used for the hetero atoms: Boron, Germanium, Lead and Oxygen.
- ii) Draw structures for the following:
 - A four membered nitrogen containing unsaturated heterocycle
 - Oxygen and nitrogen containing sulphur and nitrogen containing unsaturated heterocycle.
- iii) Name the following structures:



- iv) Explain the preparation of oxirane.
- v) What are the different physical properties of pyridine?
- vi) Draw the structures for indolizine and benzo-4-pyrone.
- vii) How will you prepare dibenzofuran?
- viii) Give appropriate example to determine base component for rings of equal size with different number of hetero atoms.
- ix) How will you synthesize azocine?
- x) Name the following structures:

**Q.2 Answer any two of the following questions: (14)**

- i) Name the following structures and mention the rule used to name them:



- ii) Explain the synthesis of triazole. Draw the structure of pyrimidine.
- iii) Name and draw structures of any two fused heterocycles following trivial system. Which stem is used to name a seven membered saturated heterocycle?

Q.3 Answer the following questions: (14)

- i) How will you number a fused benzoheterocycle? Which atom out of Sb and Sn has higher priority? 05
- ii) Write and note on preparation and properties of imidazole. 05
- iii) Mention chemical reactions of quinoline. 04

OR

Answer the following questions:

(14)

- i) Explain the preparation methods of azetidine and properties of thiazole.
- ii) Explain with example naming of a bridged heterocycle.

Q.4 a) Answer any two out of the following questions:

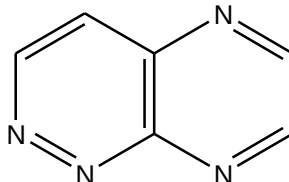
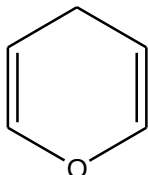
(10)

- i) Write methods to write the following heterocycle:



. Draw the structure of cinnoline.

- ii) Explain the rule to name the following heterocycles:



- iii) How will you synthesize isothiazole and diazirine?

b) Answer any one of the following questions:

(04)

- i) Explain preparation of isoquinoline.
- ii) What are the different chemical properties of quinazoline?

Q.5 Answer any two of the following questions:

(14)

- i) Explain the preparation and properties of pyran. Draw the structure of oxaziridine.
- ii) How will you synthesize carbazole? Draw the structure of phenanthridine.
- iii) What are the different properties of tetrazole? Name the following structure:

