

**PARUL UNIVERSITY**  
**PARUL INSTITUTE OF APPLIED SCIENCES**  
**MID SEMESTER INTERNAL EXAMINATION, MARCH 2020**  
**M.Sc. Chemistry Semester IV**

**Paper Name: Chemistry of Heterocyclic compound**

**Date: 04/03/2020**

**Paper Code: 11205253**

**Time: 1hr 30min**

**Max. Marks: 40**

**Instructions:**

1. All questions are compulsory and options are given in first and second question only.
  2. Numbers to the right of question indicate the marks of respective question.
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**Q. 1** Attempt any one question of the following. **(08)**

- (i) Explain the synthesis and chemical reaction of Quinoline.
- (ii) Explain the synthesis and chemical reaction of Pyridines.

**Q. 2** Attempt any three questions from the following. **(12)**

- (i) Draw the resonating structure and explain the basic nature of Pyridines.
- (ii) What is pyrazine give chemical reaction?
- (iii) How many type of diazines draw the structure?
- (iv) Explain the synthetic reaction of indole.
- (v) Write the chemical and synthesis reaction of cinnoline .

**Q. 3** Do as directed. Attempt all five questions. **(05)**

- (i) ----- is prefix for sulphur containing heterocyclic compound.
- (ii) Pyridine cannot carried out -----electrophilic substitution reaction
- (iii) Skraup synthesis is preparation method of-----.
- (iv) Pyridine is less basic than-----.
- (v) Draw the structure of pyridiazine.

**Q. 4** Write correct option in your answer sheet for following 15 multiple choice questions. **(15)**

**MCQ 1** Which of the following is a not a five member ring?

- a) Pyridine b) Pyrrole c) Furan d) Thiophene

**MCQ 2** Which element is present in Pyridine

- a) S b) P c) F d) N

**MCQ 3** How much number of resonating structures stabilizes a pyridine molecule?

- a) 5 b) 4 c) 3 d) 6

**MCQ 4** Pyridine is?

- a) Water soluble b) cyclo hexane soluble c) a and b d) none of the above.

**MCQ 6** Most reactive position in electrophilic substitution reaction in quinoline is.

- a) 5and 8 b) 4and 2 c) 3and 1 d) 6 and 1

- MCQ 7 Reducing agent for quinoline  
a) Sn/HCl b) Pyrrole c) ammonia d) NaOH
- MCQ 8 Oxidation reaction of quinoline is carried out with  
a) Sn/HCl b) Pyrrole c) ammonia d) potassium permanganate
- MCQ 9 Which one is the preparation method of isoquinoline .  
a) Aldol condensation b) Suzuki Synthesis c) Skraup synthesis d) Pictet Spengler synthesis
- MCQ 10 In which position Halogenation of pyridine carried out  
a) 5 b) 3 c) 1 d) none of the above
- MCQ 11 Nucleophilic Substitution reaction takes place on pyridine at  
a) 2 and 4 b) 3 c) 3 and 1 d) 6 and 1
- MCQ 12 Birch reduction is carried out for  
a) Pyridine b) Pyrrole c) Furan d) Thiophene
- MCQ 13 Pyridine reduced in the presence of HI/P and forms  
a) n-pentane b) Pyrrole c) Furan d) Thiophene
- MCQ 14 IUPAC name of pyrazine is  
a) 1,4-Diazine b) Pyrrole c) Furan d) Thiophene
- MCQ 15 IUPAC name of pyridazine is  
a) 1,4-Diazine b) Pyrrole c) Furan d) 1,2-Diazine