

SEAT No. _____

No. of Printed Pages : 3

[164/A31]

SARDAR PATEL UNIVERSITY

M.Sc. Semester-III (Organic Chemistry) Examination

Saturday, 27th October 2018

Heterocyclic chemistry: PS03CORC03

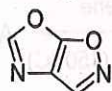
Time: 02:00 pm to 05:00 pm

Marks: [70]

Note: Right hand figures indicate marks

Q-1 [A] Select the correct answer from the option given below. [08]

1. Which is the correct name for following heterocyclic compound?

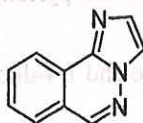


- (a) [1,3]Oxazolo[4,5-d][1,2]oxazole (b) [1,2]Oxazolo[4,5-d][1,3]oxazole
 (c) [1,3]Oxazolo[2,3-b][1,2]oxazole (d) [1,2]Oxazolo[2,3-b][1,3]oxazole
2. Benzene ring fused with pyrrole is called _____.
 (a) benzo[b]furan (b) quinoline (c) indole (d) benzo[b]thiophene
3. Which of the following reaction is not used for synthesis of quinoline?
 (a) Skraup synthesis (b) Combe synthesis
 (c) Knorr synthesis (d) Pomeranz- Fritsch synthesis
4. Reaction of uracil with 1,2-dimethylhydrazine yields _____.
 (a) 1,2-dimethylpyrazol-5-one & dimethyl urea (b) pyrazole & urea
 (c) 1,2-dimethylpyrazol-5-one & urea (d) pyrazole & dimethyl urea
5. Bromination of isoquinoline in presence of CCl₄ followed by treatment with pyridine gives _____ derivative.
 (a) 5-bromo (b) 6-bromo (c) 4-bromo (d) 1-bromo
6. Which of the following is the correct basicity order?
 (a) pyrimidine > pyrazine > pyridine (b) pyrazine > pyridine > pyrimidine
 (c) pyridine > pyrazine > pyrimidine (d) pyridine > pyrimidine > pyrazine
7. Coumarin in the presence of excess AlCl₃, bromination reaction proceeds at _____.
 (a) 6th position (b) 5th position (c) 4th position (d) 3rd position
8. Reaction of 2-benzopyrylium salt with NH₃ yields _____.
 (a) quinoline (b) isoquinoline (c) indole (d) pyridine

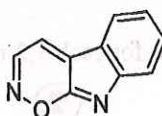
Q-2 Answer the following (Any Seven). [14]

1. Give the complete name of the following compounds.

A.



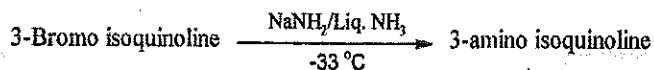
B.



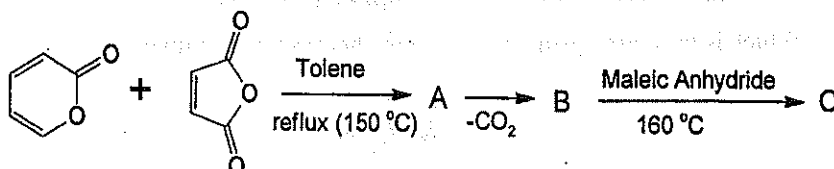
①

(PTO)

- Write Pfitzinger synthesis of quinoline.
- Write ISAY synthesis.
- Imidazole is stronger base than pyrrole, explain.
- Write the synthesis of 1-benzopyrylium salt from salicylaldehyde.
- Suggest the mechanism for following transformation.



- Pyridine is weaker base than ammonia, explain.
- Complete the following reaction scheme.

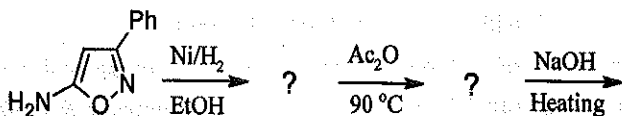


- Give the mechanism for transformation of 2-methyl-3-hydroxy pyridine from 2-acetyl furan.

Q-3 [A] Discuss Fischer indole synthesis and Reissert synthesis. [06]

[B] Answer the following. [06]

- Write the ring expansion reactions of indole.
- Complete the following reaction scheme.



OR

[B] Write synthesis and electrophilic substitution reaction of Benzo[b]thiophenes. [06]

Q-4 [A] Answer the followings. [06]

- Explain the formation of isomeric quinolines by Conrad Limpach and Knorr method.
- Give one synthesis of quinoxaline and phthalazine.

[B] Answer the followings. [06]

- Describe briefly electrophilic substitution reactions of substituted quinoline.
- How one can convert quinoline to quinoline-2-carboxylic acid? Give the mechanism for formation of quinoline-2-carboxylic acid.

OR

[B] Write a note on cyanine dyes of Benzo[b]pyridine. [06]

Q-5 [A] Describe the electrophilic substitution reactions of substituted pyridine-N-oxide. [06]

[B] Give at least two synthesis for each 1,2-diazine, 1,3-diazine and 1,4-diazine. [06]

OR

[B] Answer the following. [06]

1. Describe ring transformation reactions of pyrimidine.
2. Give the synthesis of s-triazine and explain its reaction with phenyl hydrazine.

Q-6 [A] Write at least one synthesis of α -pyrone and γ -pyrone. Describe their electrophilic substitution reactions. [06]

[B] Answer the following. [06]

1. Give the synthesis of coumarin derivative and flavone starting from resorcinol and *o*-phenyl acetate respectively.
2. Write reactions of coumarin, chromone and flavone with NaOH respectively.

OR

[B] Describe the synthesis of pyrylium salt. Explain reactions of 2,4,6-trimethylpyrylium salt with H_2O_2 , NaOH and NaCN. [06]

— X —

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. This is essential for ensuring the integrity of the financial data and for providing a clear audit trail. The records should be kept up-to-date and should be accessible to all relevant parties.

2. The second part of the document outlines the procedures for handling incoming payments. It is important to ensure that all payments are received in full and that any discrepancies are identified and resolved promptly. The procedures should be clearly defined and followed consistently.

3. The third part of the document describes the process for issuing invoices. Invoices should be issued promptly and accurately, reflecting the actual work performed and the agreed-upon terms. It is also important to keep track of the status of each invoice and to follow up on any outstanding payments.

4. The fourth part of the document discusses the importance of regular communication with clients. This includes providing regular updates on the progress of the work and addressing any concerns or questions that may arise. Clear communication is essential for building trust and ensuring that the client is satisfied with the results.

5. The fifth part of the document outlines the procedures for handling disputes. It is important to have a clear process in place for resolving any disagreements or conflicts that may arise. This process should be fair and transparent, and should aim to resolve the issue as quickly as possible.

6. The sixth part of the document discusses the importance of maintaining accurate records of all expenses. This is essential for ensuring the integrity of the financial data and for providing a clear audit trail. The records should be kept up-to-date and should be accessible to all relevant parties.

7. The seventh part of the document outlines the procedures for handling outgoing payments. It is important to ensure that all payments are made on time and that any discrepancies are identified and resolved promptly. The procedures should be clearly defined and followed consistently.

8. The eighth part of the document describes the process for issuing receipts. Receipts should be issued promptly and accurately, reflecting the actual work performed and the agreed-upon terms. It is also important to keep track of the status of each receipt and to follow up on any outstanding payments.

9. The ninth part of the document discusses the importance of regular communication with clients. This includes providing regular updates on the progress of the work and addressing any concerns or questions that may arise. Clear communication is essential for building trust and ensuring that the client is satisfied with the results.

10. The tenth part of the document outlines the procedures for handling disputes. It is important to have a clear process in place for resolving any disagreements or conflicts that may arise. This process should be fair and transparent, and should aim to resolve the issue as quickly as possible.