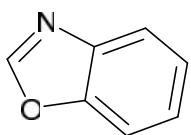
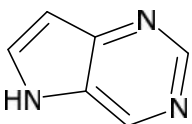
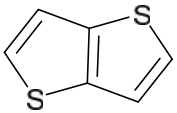
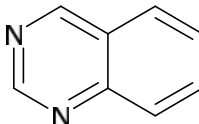


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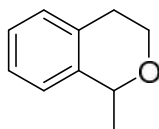
SEMESTER END EXAMINATION APRIL – 2017**M. Sc. Industrial Chemistry****16PICCC08 – HETEROCYCLIC CHEMISTRY****Duration of Exam – 3 hrs****Semester – II****Max. Marks – 70****Part A (5x2= 10 marks)**Answer **ALL** questions

1. Draw the structures of following
i) Pyrazole ii) Thiazole iii) Oxazole iv) Isoxazole
2. Discuss applications of Pyrimidine heterocycle.
3. Give the IUPAC nomenclature of following
   
4. Write Pictet-Spengler synthesis of Isoquinoline.
5. Define Disconnection, Synthon, FGI and FGR with examples.

Part B (5X5 = 25 marks)Answer **ALL** questions

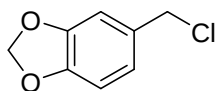
- 6a. Write any three synthesis and electrophilic substitution reactions of 1,2,4-Triazole.
OR
- 6b. Give any three Electrophilic reactions on N atom and synthesis of Imidazole.
- 7a. Write any four synthesis of Pyridine.
OR
- 7b. Discuss Pinner and Biginelli synthesis of Pyrimidine.
- 8a. Give any three synthesis and Electrophilic reactions of Indole.
OR
- 8b. Discuss Electrophilic and Nucleophilic reactions of Benzo(b)thiophene.
- 9a. Discuss any four synthesis of Isoquinoline and its application.
OR
- 9b. Write any three synthesis and Electrophilic reactions of Cinnoline.

10a. Give the disconnection analysis and synthesis of the following compound.



OR

10b. Give the two possible disconnection analysis and synthesis of the following compound.



Part C (5X7 = 35 marks)

Answer **ALL** questions

11a Give any four synthesis of Pyrazole and its electrophilic reactions.

OR

11b Give following synthesis of Isoxazole:

i) Claisen, ii) Quilico.

12a Describe any three Electrophilic substitution and Nucleophilic reactions of Pyridine.

OR

12b Write any three syntheses and electrophilic reactions of Pyrazine.

13a Write any three syntheses of Benzofuran. Discuss its electrophilic and nucleophilic substitution reactions.

OR

13b Draw the structures of following;

i) 1,2,4-oxadiazole

ii) Thieno[2,3-b]furan

iii) 3H-imidazo[4,5-b]pyridine

iv) 4H-imidazo[4,1-i]quinoline

v) Pyrazolo[1,5-a]quinazoline

vi) Furo[2,3-c]quinoline

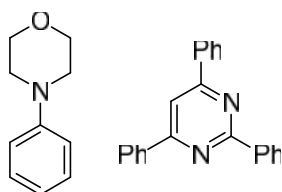
vii) furo[3,2-b]furan

14a Give any three synthesis of Quinazoline and its electrophilic reaction on C & N atom.

OR

14b Write any three synthesis of Quinoxaline and its electrophilic reactions on C & N atom.

15a Give the disconnection analysis and synthesis of the following compounds.



OR

15b Give the disconnection analysis and synthesis of the following compounds.

