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Code No. 1129/CBCS

## FACULTY OF PHARMACY

B. Pharmacy III – Semester (CBCS) (Main) Examination January 2018

Subject: Pharmaceutical Organic Chemistry – II

Time: 3 Hours

Max. Marks: 70

Note: Answer all questions. All questions carry equal marks.

1. (a) Explain the following reactions of benzene with examples. 8  
i. Sulphonation ii. Halogenation
- (b) Explain the nucleophilic substitution reactions of halobenzenes with special emphasis on benzyne mechanism. 6
- OR
- (c) Explain the following: 4  
i. Huckel's  $(4n+2)\pi$  rule 3  
ii. Haworth synthesis of naphthalene 3  
iii. Oxidation reactions of anthracene 4  
iv. Reimer-Tiemann reaction of phenols 4
2. (a) Differentiate between following terms with examples 8  
i. Enantiomer and diastereomer  
ii. Absolute and relative configurations
- (b) Explain the elements of symmetry with relevant examples. 6
- OR
- (c) Define the terms: Plane polarized light, plane of symmetry, geometrical isomerism, racemic modification and resolution. 5
- (d) Explain the relationship between following concepts with optical activity. 9  
i. Enantiomerism ii. Asymmetry iii. Chirality
3. (a) Why electrophilic substitution takes place at 2- & 5-position in furan? Explain with examples. 5
- (b) Explain the oxidation reactions of quinoline and isoquinoline. 5
- (c) Write structure and specific uses of two medicinally important compounds representing each of thiophene and pyrrole. 4
- OR
- (d) Write a note on the following: 3  
i. Bischler-Napieralski synthesis 3  
ii. Fischer-Indole synthesis 3  
iii. Hantzsch pyridine synthesis 3
- (e) Comment on the relative basicities of pyrrole and pyridine. 5
4. (a) Explain any two methods of preparation each of imidazole and benzimidazole. 10
- (b) Write the structure and uses of medicinal compounds (two) containing following heterocyclic compounds. 4  
i. Benzopyran ii. Cepham
- OR
- (c) Explain any two methods of preparation each for isoxazole and thiazole. 8
- (d) Write the structure and uses of medicinal compounds (two) containing following heterocyclic compounds. 6  
i. Isoxazole ii. Penam iii. Triazole