



Name :

Roll No. :

Invigilator's Signature :

**CS/B.PHARM (NEW)/SEM-3/PT-304/2011-12
2011**

PHARMACEUTICAL CHEMISTRY (ORGANIC)

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

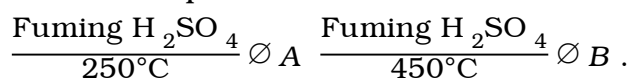
**GROUP – A
(Multiple Choice Type Questions)**

1. Choose the correct alternatives for any *ten* of the following :

10 × 1 = 10

- i) Pyridine reacts with HCl to form
- a) Pyridinium chloride b) 3-Chloro pyridine
c) 2-Chloro pyridine d) All of these.

ii) Benzene sulphonic acid



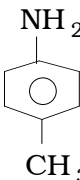
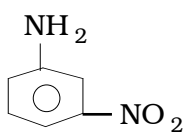
Compound B in above reaction is

- a) Benzene, 1, 3-disulphonic acid
b) Benzene-1, 3, 5-trisulphonic acid
c) Benzene-1-sulphonic acid
d) Benzene-1, 2-disulphonic acid.

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- iii) Nitrobenzene reacts with Br_2 in presence of FeCl_3 solution to give
- O*-chloronitrobenzene
 - O*-bromonitrobenzene
 - m*-chloronitrobenzene
 - m*-bromonitrobenzene.
- iv) Which of the following is least basic in nature ?
- CH_3NH_2
 - $\text{C}_6\text{H}_5\text{NH}_2$
- c) 
- d) 
- v) Pentosan upon heating with aqueous mineral acid solution gives product *x*. *x* upon heating in presence of O_2 and Cu_2O gives heterocyclic compound Furan, where product *x* is
- Pyrrole
 - Furfural
 - Furanoic acid
 - Pyridine.
- vi) Aniline undergoes oxidation with $\text{Na}_2\text{Cr}_2\text{O}_7 / \text{H}_2\text{SO}_4$ to give
- Schiff's base
 - p*-benzoquinone
 - Benzoic acid
 - Phenol.
- vii) Indole is
- 6, 5 conjugated system
 - 6, 6 conjugated system
 - 4, 5 conjugated system
 - 5, 6 conjugated system.
- viii) How many stereoisomers are possible in Aldopentose ?
- 4
 - 8
 - 12
 - 16.
- ix) Which of the following compounds reduces Tollen's reagent ?
- Glucose
 - Sucrose
 - Methanol
 - Acetic acid.



- x) Chichibabin reaction is a
- electrophilic substitution reaction
 - nucleophilic substitution reaction
 - rearrangement reaction
 - none of these.
- xi) *L* (+) Rhamnose is
- Deoxy sugar
 - Amino sugar
 - Keto sugar
 - All of these.
- xii) Carbylamine reaction is positive for
- 1° aromatic amines
 - 2° aromatic amines
 - 3° aromatic amines
 - all of these.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

- Write short notes on the following :
 - TNT
 - Chloramine-T.
- Write down the structures of any five of the following :
Quinoxaline, Cinnarizine, Cinnoline, Pyrrazole, Imidazole, Phenothiazine, Purine, Pyrimidine.
- Give two reaction schemes for the synthesis of Anthracene.
- Explain epimerisation with example.
- Mention the rules for nomenclature of fused heterocyclic system.

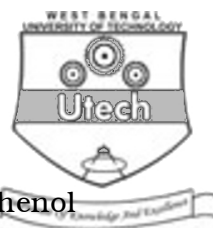
GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

- What are electrophilic and nucleophilic aromatic substitution reactions ?
 - Explain Elimination-Addition mechanism for nucleophilic aromatic substitution.
 - What are the effects of activating and deactivating groups in electrophilic reaction ? Explain with example.

5 + 4 + 6



8. a) Explain the following facts :
- p*-nitrophenol is more acidic than phenol
 - p*-methoxy phenol is less acidic than phenol.
- b) Describe any five methods of preparation of phenol with reaction.
9. What is reducing sugar ? Explain chain shortening reaction of aldohexose. What is mutarotation ? Write down any three reactions of glucose. Explain with reaction about the glucosazone formation. Differentiate between glycogen, starch & cellulose.
10. a) Which is more basic among pyrrole and pyrrolidine and why ?
- b) In which position of pyridine is electrophilic attack most stable and why ?
- c) Discuss Hantzsch Pyridine synthesis.
- d) Give the following reactions of Pyridine :
- Nitration reaction
 - Sandmayer reaction.
11. How can you synthesize benzene diazonium chloride from benzene ? How can you obtain the azo dyes from the benzene diazonium salts ? Write in brief on the reduction of nitrobenzene. Compare the basicity of aniline and toluidine. Direct nitration of aniline gives *m*-nitro aniline. Why ? How can you get *p*-nitroaniline from aniline ?

$$2 \frac{1}{2} + 1 \frac{1}{2} + 5 + 2 \frac{1}{2} + 3 \frac{1}{2}$$

