



UNIVERSITY OF THE PUNJAB

Seventh Semester – 2019

Examination: B.S. 4 Years Program

Roll No. in Fig.

Roll No. in Words.

PAPER: Organic Chemistry (Sp. Theory-II)
Course Code: CHEM-410 Part-I (Compulsory)

MAX. TIME: 15 Min.

MAX. MARKS: 10

Signature of Supdt.:

Attempt this Paper on this Question Sheet only.

Please encircle the correct option. Division of marks is given in front of each question.

This Paper will be collected back after expiry of time limit mentioned above.

Q.1. Encircle the right answer, cutting and overwriting is not allowed. (1x10=10)

- I) Which is most reactive in aromatic electrophilic substitution?
- Ethyl benzene
 - Methoxybenzene
 - Chlorobenzene
 - Acetophenone
- II) Which of the following is least reactive for halogenation of benzene?
- F₂
 - Cl₂
 - Br₂
 - I₂
- III) The reaction in which benzene reacts with alkyl halide in presence of a lewis acid as a catalyst to produce alkylbenzene is known as
- Nitration
 - Halogenation
 - Friedel-Crafts Acylation
 - Friedel-Crafts Alkylation
- IV) Which of the following reactions are favored by polar aprotic solvent?
- S_N1 reactions
 - S_N2 reactions
 - Both S_N1 and S_N2 reactions
 - None of the mentioned
- V) Which types of isomers are formed in rearrangement reactions?
- Structural isomers
 - Geometrical isomers
 - Optical isomers
 - Conformational isomers
- VI) The benzylic acid rearrangement reaction of a cyclic diketone leads to
- Ring expansion
 - Ring contraction
 - Ring fusion
 - None of these

P.T.O.



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PAPER: Organic Chemistry (Sp. Theory-II)

Course Code: CHEM-410 Part – II

MAX. TIME: 2 Hrs. 45 Min.

MAX. MARKS: 50

ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

Q.2. Give short answers to the following questions.

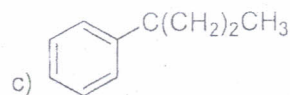
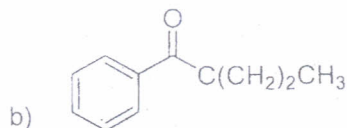
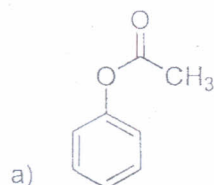
(5x4=20)

- Explain how electron donating and electron withdrawing groups on benzene ring control reaction of incoming electrophile.
- Why nitration of phenol is much faster than benzene?
- What is Pinacol rearrangement?
- Why alkyl group has greater migrating aptitude than aryl group in Wagner-Meerwein rearrangement?
- Describe Paal Knorr synthesis of Pyrrole.

Q. No. 3.

[9]

- How would you synthesize the followings from benzene. Write complete mechanism of each step involved.



- Describe two methods of furan synthesis.

[6]

Q. No. 4. Complete the following reactions and draw their mechanisms:

[3 x 5 = 15]

