

Name.....

Date: - 04 – 05 – 2020

Chemistry: - 2<sup>nd</sup> Year Test # 3

Time: - 20min..... Marks = 17

- I. Benzene cannot undergo:
  - (a) Substitutions reactions (b) addition reactions (c) oxidation reactions (d) eliminations reactions
- II. The reaction of toluene with  $\text{Cl}_2$  in presence of  $\text{FeCl}_3$  gives mainly:
  - (a) Benzoyl chloride (b) benzyl chloride (c) m-chlorotoluene (d) o-and p-chlorotoluenes
- III. The group that deactivates the benzene ring for electrophilic substitution is:
  - (a) Nitro (b) chlorine (c) methyl (d) hydroxy
- IV. The compound which reacts faster with Lucas reagent at room temperature is:
  - (a) 2-Methyl 1-propanol (b) 2-butanol (c) 1-butanol (d) 2-methyl 2-propanol
- V. Which is the formula of Carbinol? (a)  $\text{CH}_3\text{COOH}$  (b)  $\text{C}_2\text{H}_5\text{OH}$  (c)  $\text{CH}_3\text{OH}$  (d)  $\text{C}_6\text{H}_5\text{OH}$
- VI. Electrophilic substitution in phenol takes place at:
  - (a) o-and p-position (b) only at m-position (c) only at o-position (d) only at p-position
- VII. Ethyl iodide on treatment with sodium ethoxide gives (a)  $\text{CH}_3 - \text{O} - \text{CH}_3$  (b)  $\text{C}_2\text{H}_5 \text{O} \text{CH}_3$  (c)  $\text{C}_2\text{H}_5 - \text{O} \text{C}_2\text{H}_5$  (d)  $\text{C}_2\text{H}_6$
- VIII. Diethyl ether can be decomposed by heating with (a)  $\text{KMnO}_4$  solution (b) Water (c)  $\text{NaOH}$  (d)  $\text{HI}$
- IX. Bakelite is obtained by the condensation of
  - (a) Acetaldehyde and acetone (b) formaldehyde and phenol (c) acetaldehyde and phenol (d) formaldehyde and acetone
- X. When  $\text{CO}_2$  is made to react with ethyl magnesium iodide, followed by acid hydrolysis, the product formed is:
  - (a) propane (b) propanoic acid (c) propanedioic acid (d) ethanol
- XI.  $\text{S}_\text{N}2$  reactions can be best carried out with:
  - (a) primary alkyl halides (b) secondary alkyl halides (c) Tertiary alkyl halides (d) all the three
- XII. Alkyl halides are considered to be very reactive compounds towards nucleophiles, because
  - (a) they have an electrophilic carbon (b) they have an electrophilic carbon and a good leaving group
  - (c) they have an electrophilic carbon and a bad leaving group (d) they have a nucleophilic carbon and a good leaving group
- XIII. Which one of the following is not a nucleophile? (a)  $\text{H}_2\text{O}$  (b)  $\text{H}_2\text{S}$  (c)  $\text{BF}_3$  (d)  $\text{NH}_3$
- XIV. Which of the following reagents will react with both aldehydes and ketones?
  - (a) Grignard's reagent (b) Tollen's reagent (c) Fehling's reagent (d) Benedict's reagent
- XV. The formation of cyanohydrins from a ketone is an example of:
  - (a) Electrophilic substitution (b) nucleophilic substitution (c) nucleophilic addition (d) electrophilic addition
- XVI. Which of the following undergoes halo form reaction? (a)  $\text{CH}_3\text{COCH}_3$  (b)  $\text{C}_2\text{H}_5\text{Cl}$  (c)  $\text{HCHO}$  (d)  $(\text{CH}_3)_2\text{CO}$
- XVII. Which types of agents aldehydes are: (a) bleaching (b) reducing (c) hydrating (d) oxidizing

Chemistry -

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(Subjective)

Section- II

Give short answers of all questions

Time: 2:40hrs:

22 x 2 = 44

Q. No 2. Give short answers of all questions

8x2=16

- i. Discuss X-rays structure of benzene.
- ii. How will you distinguish between Benzene and toluene?
- iii. How will you convert phenol into benzene?
- iv. Convert benzene into benzoic acid.
- v. How can we prepare benzene and its derivatives by aromatization of paraffins?
- vi. Convert benzene into TNT
- vii. Discuss the reactivity of Grignard reagent.
- viii. On what factors reactivity of haloalkanes depend?

Q. No 3. Give short answers of all questions

8x2=16

- i. How ethers can be prepared?
- ii. How will you distinguish between phenol and ethanol?
- iii. What is meant by the term denaturing of alcohols
- iv. What is the chemistry of Lucas Test?
- v. How will you convert Ethanal into acetal and vice versa?
- vi. How can we distinguish between methanal and ethanal?
- vii. Write general mechanism of addition of ammonia derivatives to carbonyl group.
- viii. Give two uses of formaldehyde and acetaldehyde.

Q. No 4. Give short answers of all questions

6x2=12

- i. Compare the acidity of phenol with other compounds. I
- ii. What is formalin?
- iii. Give mechanism for the reduction of carbonyl compounds using  $\text{NaBH}_4$ .
- iv. Discuss X-rays structure of benzene.
- v. What are the Electrophiles and Nucleophiles?
- vi. How will you convert bromomethane into ethanol?

Section- III

Note: Attempt all questions

3x8 = 24

Q. No 5. (a) Discuss the reactions of phenol with the followings

\* Ethanoyl chloride \* Hydrogen \* Nitric Acid \* Caustic soda

4

(b) Describe the Friedel Craft Reactions with mechanism

4

Q. No 6. (a) Discuss the synthetic importance of Grignard's reagents

4

(b) Describe Cannizzar's reaction with mechanism

4

Q. No 7. (a) Discuss the commercial preparation of Ethanol

4

(b) How does the ethanal react with the following reagents?

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i.  $\text{CH}_3\text{MgBr}$ . ii.  $\text{I}_2/\text{NaOH}$  iii.  $\text{NaHSO}_3$  iv. dil.  $\text{NaOH}$