

**PARUL UNIVERSITY**  
**FACULTY OF PHARMACY**  
**B. Pharm. Summer 2017 - 18 Examination**

Semester: 2

Subject Code: BP202T

Subject Name: Pharmaceutical Organic Chemistry I - Theory

Date: 26/05/2018

Time: 10:00AM TO 01:00PM

Total Marks: 75

**Instructions:**

1. Figures to the right indicate maximum marks.
2. Make suitable assumptions wherever necessary.

**Q.1 Multiple Choice Questions (MCQs) (1 Mark Each)****(20)**

1. Amines which are bonded with alkyl group are
 

a) Primary amines	b) Tertiary amines
c) Secondary amines	d) Quaternary amines
2. Which of the following statements about glycerol is incorrect?
 

a) It can depress the freezing point of water	b) It is a good solvent for polar covalent molecules
c) It is metabolized to oxalic acid.	d) It is hygroscopic.
3. The general molecular formula of aldehydes and ketones is
 

a) $C_nH_{2n-1}O$	b) $C_nH_{2n}O$
c) $C_nH_{2n+2}O$	d) $C_nH_{2n+4}O$
4. Conversion of an aldehyde to an alcohol is generally known as...
 

a) Oxidation	b) Nitration
c) Reduction	d) Esterification
5. Which of the following is correct.
 

a) Aldehydes undergo the Cannizzaro's reaction	b) Aldehydes are less susceptible to oxidation than ketones
c) Aldehydes are more susceptible to oxidation than ketones	d) Formaldehyde forms CuO with Fehling's solution
6. Which molecule is an example of a ketone?
 

a) Ethanal (Acetaldehyde)	b) Propanamide
c) Propan-2-one (acetone)	d) Ethanoic anhydride (Acetic anhydride)
7. Conversion of a carboxylic acid to an ester is known as...
 

a) Oxidation	b) Esterification
c) Reduction	d) Nitration
8. Which of the following statements regarding the E1 mechanism is wrong?
 

a) Reactions by the E1 mechanism are unimolecular in the rate-determining step	b) Reactions by the E1 mechanism are generally first order.
c) Reactions by the E1 mechanism usually occur in one step.	d) Reactions by the E1 mechanism are multi-step reactions.
9. SN2 reactions involving chiral electrophiles usually proceed with:
 

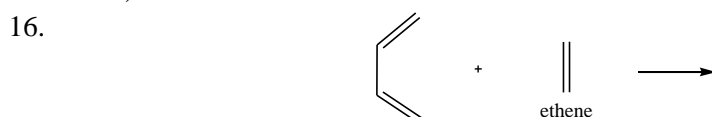
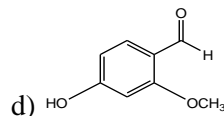
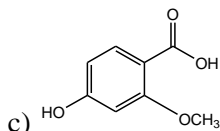
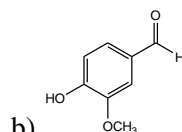
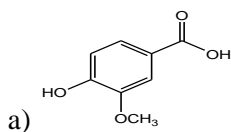
a) Retention of configuration	b) Inversion of configuration
c) Equal amounts of inversion and retention of configuration	d) None of above
10. Perkin reaction is a reaction of an  $\alpha$ ,  $\beta$ -unsaturated aromatic acid by the aldol condensation of an aromatic aldehyde and \_\_\_\_\_.
 

a) Aromatic amine	b) Nitroso amine
c) Aliphatic amines	d) Acid anhydride
11. Rate of reaction of the Lucas test of alcohol follows.....
 

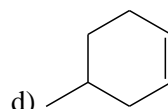
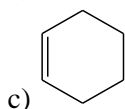
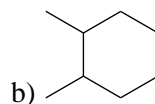
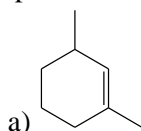
a) $1^\circ > 2^\circ > 3^\circ$	b) $2^\circ > 1^\circ > 3^\circ$
c) $3^\circ > 2^\circ > 1^\circ$	d) None of above
12. Benedict's reagent contains \_\_\_\_\_.
 

a) $KMnO_4$	b) $CuSO_4$
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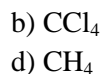
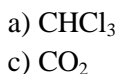
- c) Sodium citrate
13. Iodoform test is used for \_\_\_\_\_
- a) Aldehyde and Ketones  
b) Nitro compounds  
c) Primary amines  
d) Hydrocarbons
14. Hexamine is used in the treatment of \_\_\_\_\_
- a) Urinary tract infections  
b) Angina pectoris  
c) Diabetes  
d) Migraine
15. Structure of Vanillin is \_\_\_\_\_



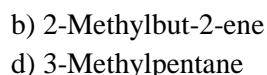
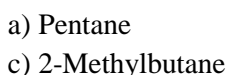
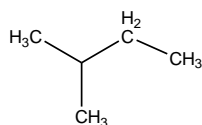
Complete the reaction: buta-1,3-diene



17. What is correct structure of Chloroform.

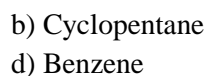
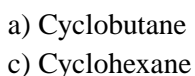


18. Give IUPAC name of

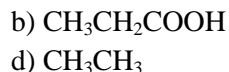


- 19.

Give IUPAC name of



20. What is correct structure Acetic acid.



**Q.2 Long Answers (any 2 out of 3) (10 Mark Each)**

(20)

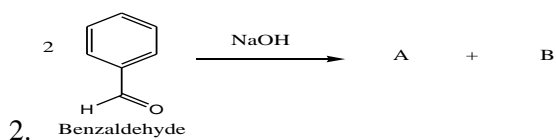
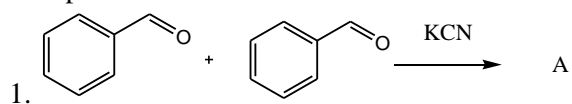
- Write a short note on  $\text{S}_\text{N}1$  reaction with kinetics, and order of reactivity of alkyl halides.
- Give a brief note on aldol condensation and Perkin condensation with examples.
- Explain order of reactivity and kinetics of  $\text{E}_1$  and  $\text{E}_2$  reactions with examples.

**Q.3 Short Answers (any 7 out of 9) (5 Mark Each)**

(35)

- Explain in brief about allylic rearrangement.
- Give a brief account on  $\text{sp}^3$  hybridization in alkanes.
- Draw the structure of Ethyl alcohol, Propylene glycol and write a use of both.
- Explain the basicity of aliphatic amines in brief with examples.

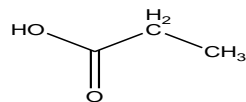
5. Complete the reactions:



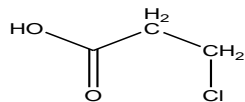
2. Benzaldehyde

6. Give the structure of Formaldehyde, Cinnamaldehyde and write a uses of both.

7. Explain which one is more acidic.



Propionic acid



3-Chloropropanoic acid

8. Write short notes on structural isomerism of organic compounds.

9. Give structure and write uses of Ethanolamine, and Amphetamine.