		Sanjay Ghodawat University, Kolhapur Established as State Private University under Govt. of Maharashtra. Act No XL, 2017		2018-19
Year and Program: 2018-19 F. Y. M.Sc.		School of Science		Department of Chemistry
Course Code: CHS 502		Course Title: Organic chemistry-II		Semester – Even (II)
Day and Date: <i>Monday</i> <i>20th May, 2019</i>		End Semester Examination		Time: 3 hrs, Max Marks: 100 <i>10.30 to 11.00 am</i>
PRN:		Seat No:		Section A Marks out of 20:
Jr. Supervisor sign:		Student Sign:		Answer Booklet No.

Section A

- Instructions:** 1) All Questions are compulsory.
 2) For MCQs mark tic (✓) for correct answer. No marks for multiple tics (✓).
 3) Section A should be submitted to Jr Supervisor immediately after first 30 min.


Q.1 Multiple choice questions. (1 mark each)

	Marks	level	CO
1 Robinson annulation gives	20	L1	1
A. α -hydroxyl ketones			
B. Six member cyclic α , β -unsaturated ketones			
C. Six member cyclic β -hydroxyl ketones			
D. none of this			
2 Benzoin Condensation gives.....		L2	1
A. α -hydroxyl ketones			
B. β -hydroxyl ketones			
C. Ketones			
D. none of this			
3 Mc-Murry Coupling is carried out in presence of.....		L1	1
A. Titanium			
B. Sodium			
C. Zinc			
D. none of this			
4 $\text{CrO}_3 + \text{Py}$ is known as.....		L2	2
A) Jones Reagent.			
B. Collins reagent.			
C. Jonsons Reagent			
D. None of these			
5 1, 2-diol on cleavage by gives dialdehyde or diketones.		L2	2
A. KMnO_4			
B. MnO_2			
C. OsO_4			

- D. All of these
- 6 Oxidation state of Mn in KMnO_4 is L1 2
 A. 6
 B. 7
 C. 8
 D. 5
- 7 In catalytic hydrogenation reaction, which of the following catalyst is used? L2 3
 A) Pd
 B) Ni
 C) Pt
 D) All of the above
- 8 Esters on reduction with LAH give..... L1 3
 A) 1° Alcohol,
 B) 2° Alcohol
 C) 3° Alcohol
 D) None of this
- 9 Reduction of Cyclohexanone with Zn-Hg/HCl gives.....as a product. L2 3
 A. Benzene
 B. Cyclohexane
 C. Toluene
 D. none of this
- 10 Deprotection of the acyclic ketal (ketone) is carried out with L2 3
 A. $\text{MeOH}/\text{H}_2\text{O}$ and $2N \text{H}_2\text{SO}_4$,
 B. H_3O^+
 C. F^-
 D. All of this
- 11 Protection of the alcohol is carried out with L1 3
 A. MOM,
 B. MEM
 C. THP
 D. All of this
- 12 In homogeneous catalytic hydrogenation reaction..... catalyst is used. L2 3
 A. Platinum
 B. Raney Nickel
 C. $(\text{Ph}_3\text{P})_3\text{RhCl}$.
 D. All of the above
- 13 LiAlH_4 cannot reduce..... L2 3
 A. Aldehydes
 B. Nitriles
 C. Esters
 D. Aromatic rings

- 14 Which of the following compound is not an organo-lithium compound? L2 4
 A. BuLi
 B. CH₃Li
 C. CdCl₂
 D. PhLi
- 15 Synthon is L1 4
 A. Neutral species
 B. Ionic species
 C. Organometallic compound
 D. None of these
- 16 Gilman reagent is an organometallic compound of L2 4
 A. Li
 B. Cu
 C. Fe
 D. Ti
- 17 Organo-cadmium compound prepared by using..... L2 4
 A. Alkyl halide and Cadmium metal.
 B. Organo-Litium and Cadmium chloride.
 C. Both A and B
 D. None of these.
- 18 Choose correct reagent for following reaction. L2 4
- $$\begin{array}{c} \text{CH}_3 \\ | \\ \text{H}_3\text{C}-\text{C}-\text{COOH} \\ | \\ \text{CH}_3 \end{array} \xrightarrow{\quad ? \quad} \begin{array}{c} \text{CH}_3 \\ | \\ \text{H}_3\text{C}-\text{C}-\text{C}(=\text{O})-\text{Ph} \\ | \\ \text{CH}_3 \end{array}$$
- A. Ph-OH /H₂O and 2N H₂SO₄,
 B. Ph-Li (Excess) / H₃O⁺
 C. Ph-Cl / DCM
 D. None of this
- 19 Lithium-dimethyl-cuprate when react with methyl bromide gives L2 4
 A. Alkene.
 B. Ethanol
 C. Ethane
 D. None of these
- 20 Ferrocene is an organometallic compound of L2 4
 A. Li
 B. Cu
 C. Fe
 D. Ti

ESE

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Course Code: CHS 502	Course Title: Organic chemistry-II	Semester – Even (II)	
Day and Date: Monday 20th May, 2019	End Semester Examination	Time: 3 hrs, Max Marks: 100 11 to 1:30 pm	
PRN:	Seat No:		

Section B**Instructions:**

- 1) All questions are compulsory.
- 2) Figures to the right indicate full marks.
- 3) Non-programmable calculator is allowed

Q.2 Attempt any two of the following:

Marks level CO

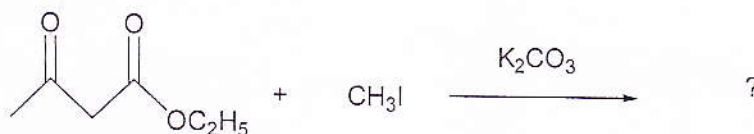
- a) Explain Robinson annulation reaction with mechanism.
- b) Discuss Mannich reaction and its application.
- c) Identify and complete following reaction?

12

6 L2 1

6 L2 1

6 L3 1



Q.3 Attempt any two of the following:

12

- a) Take an account of selectivity in hydroboration of alkene.
- b) Write note on potassium permanganate as oxidizing agent
- c) Explain Prevost reaction with detail mechanism.

6 L2 2

6 L3 2

6 L3 2

ESE

Q.4 a) Attempt any two of the following:

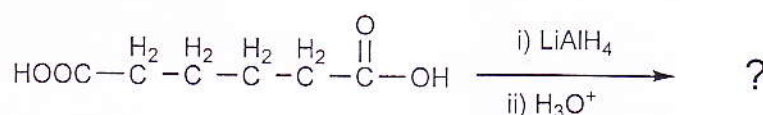
12

- | | | | | |
|------|--|---|----|---|
| i) | Give a comparative account of homogeneous and heterogeneous catalytic hydrogenation reactions. | 6 | L4 | 3 |
| ii) | Explain mechanism and applications of Wolff-Kishner reduction. | 6 | L3 | 3 |
| iii) | Give applications of the protecting and de-protecting group for carbonyl group with example | 6 | L3 | 3 |

b) Attempt any four of the following:

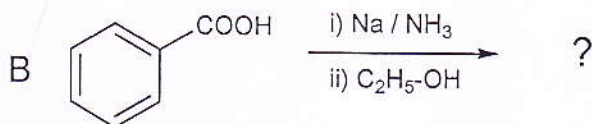
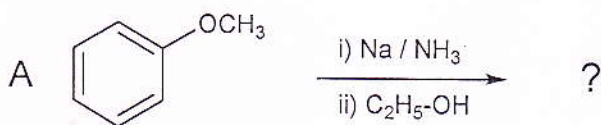
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- | | | | | |
|-----|---|---|----|---|
| i) | Explain acetals and ketals as a protecting group for alcohol. | 4 | L2 | 3 |
| ii) | Predict the product and give appropriate mechanism. | 4 | L3 | 3 |



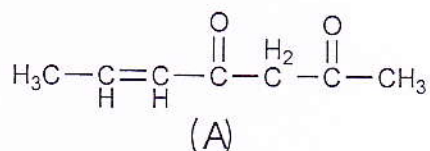
iii) Predict the product and justify.

4 L4 3



iv) What will be the possible product, when A react with following reagent?

4 L4 3



I) $\text{NaBH}_4 / \text{H}_3\text{O}^+$,

II) H_2 / Pt

v) Explain protection of carbonyl compound with 1, 2 diol and 1, 3 diol.

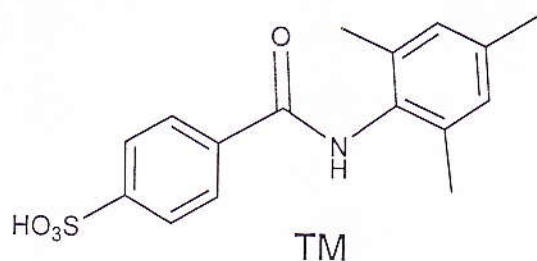
4 L2 3

ESE

Q.5 a) Attempt any two of the following:

16

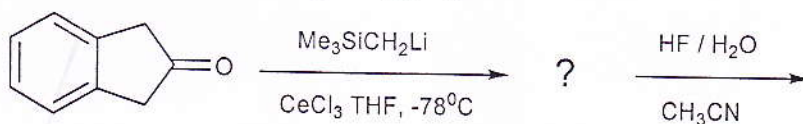
- i) Give synthetic methods for preparation of organo-lithium compound. How will you prepare primary, secondary, tertiary alcohol from organo-lithium compound? 8 L3 4
- ii) How organo-Cadmium compound can be prepared? What will happen when dimethyl cadmium react with acid chloride and acid anhydride respectively? 8 L3 4
- iii) Give your plan to synthesize following Target Molecules (TM). 8 L5 4



b) Attempt any three of the following:

12

- i) Predict the product and give appropriate mechanism. 4 L3 4



- ii) Write note on organo-Titanium compound. 4 L2 4
- iii) How will you prepare Lithium dialkyl-cuprate? Give its reaction with alkyl halide. 4 L3 4
- iv) Explain retrosynthesis and synthons with example. 4 L2 4

ESE