	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 501	Course Title: Organic chemistry-I	Semester – Odd (I)
Day and Date: Saturday 01/06/2019	End Semester Examination	Time: 3 hrs, Max Marks: 100 10.30 am to 11.00 am.
PRN:	Seat No:	Section A Marks out of 20:
Jr. Supervisor sign:	Student Sign:	Answer Booklet No:

Section A

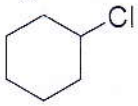
Instructions: 1) All Questions are compulsory.
2) For MCQs mark tic (√) for correct answer. No marks for multiple tics (√).
3) Section A should be submitted to Jr Supervisor immediately after first 30 min.

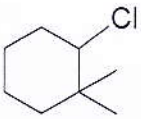
Q.1 Multiple choice questions. (1 mark each) — Marks 20 — level — CO

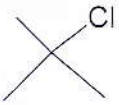
1 Which of the following carbocation is more stable? — L2 — 1
   a) CH_3^+
   b) $CH_3CH_2^+$
   c) $(CH_3)_2CH^+$
   d) $(CH_3)_3C^+$

2 Which one of the following will be more reactive in S_N1 reaction? — L2 — 1

a) 

b) 

c) 

d) 

3 Identify most favorable S_N2 Reaction. — L1 — 1
   a) $CH_3\text{-}Br + HO^- \longrightarrow CH_3\text{-}OH$
   b) $CH_3CH_2\text{-}Br + HO^- \longrightarrow CH_3CH_2\text{-}OH$
   c) $(CH_3)_2CH\text{-}Br + HO^- \longrightarrow (CH_3)_2CH\text{-}OH$
   d) $(CH_3)_3C\text{-}Br + HO^- \longrightarrow (CH_3)_3C\text{-}OH$

4 Which among of the following undergoes ortho or para-formylation with chloroform in aq. hydroxide? — L1 — 2
   a) 2,4,6 trinitro-phenol.
   b) Phenol.
   c) Nitrobenzene.
   d) None of these.

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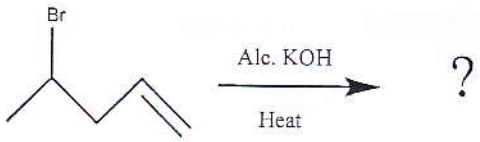
5 Sulphonation of the benzene is done with..... L1 2
   a) Oleum
   b) Conc. H_2SO_4
   c) Both a) and b)
   d) None of these

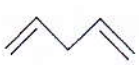
6 Nitration of the Acetanilide give ..... as a major product. L1 2
   a) o-nitro acetanilide
   b) p-nitro acetanilide
   c) m-nitro acetanilide
   d) None of these

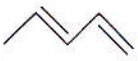
7 Reactive intermediate of E2 reaction is: L2 3
   a) Carbocation.
   b) Carbanion.
   c) Carbene.
   d) No intermediate form.

8 In the elimination reaction, if a reaction produces less substituted alkene as a major product, then this reaction follow L2 3
   a) Saytzeff's rule.
   b) Hoffmann rule.
   c) Markownikoffs rule.
   d) None of these.

9 In the given reaction, which is the correct product? L2 3



a)  b) 

c)  d) 

10 Which of the following Elimination reaction occur rarely? L1 3
   a) E1
   b) E2
   c) E1cb.
   d) None of these.

11 Which of the following rearrangement involves isocyanate as an intermediate? L1 3
   a) Beckmann rearrangement.
   b) Hofmann rearrangement
   c) Fries rearrangement.
   d) All of these.

12 Fries Rearrangement reaction is useful to prepared..... L2 3
   a) Hydroxyl aryl ketone from phenolic ester
   b) Ketone from phenolic ester
   c) Hydroxyl aryl ketone from phenol.

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d) None of these

13 Wittig reaction convert aldehyde or ketone into L1 3

a) Alkene.
b) Alkane.
c) Ketone.
d) Amine.

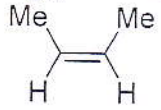
14 The number of configurational isomers of $HOCH_2(CHOH)_3CH_2OH$ is: L2 4

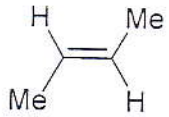
a) 2.
b) 8.
c) 6.
d) 4.

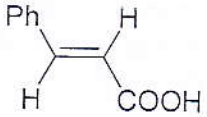
15 The number of optically active isomers in the compound $HOCH_2(CHOH)_4CHO$ are: L2 4

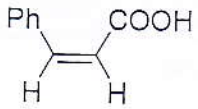
a) 16.
b) 8.
c) 4.
d) 32

16 Which of the following give meso form with Br_2? L2 4

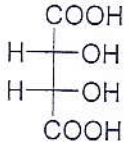
a) 

b) 

c) 

d) 

17 Identify the correct name of the following molecule? L1 4



a) (2R,3R)-(+)-tartaric acid.
b) (2R,3R)-(-)-tartaric acid.
c) (2R,3S)-meso-tartaric acid.
d) (2R,3R)-meso-tartaric acid.

18 Correct configuration of the given compound is..... L2 4

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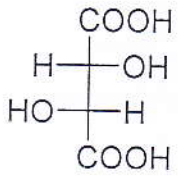
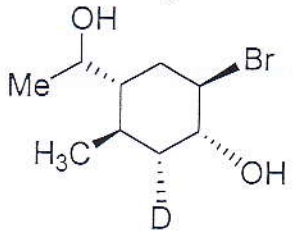


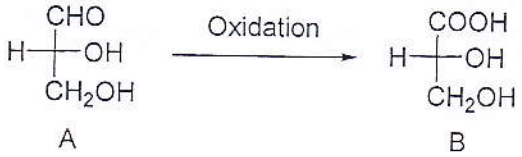
a) *2R,3R.*
b) *2S,3S*
c) *2R,3S*
d) *2S,3R*

19 How many chiral centers are there in given structure? L2 4



a) 2.
b) 5.
c) 6.
d) 4.

20 Which of the following configuration is correct for reactant A and product B respectively? L2 4



a) *D* and *D.*
b) *L* and *D.*
c) *D* and *L.*
d) None of These.

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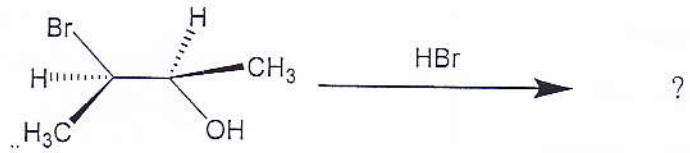
Sanjay Ghodawat University, Kolhapur Established as State Private University under Govt. of Maharashtra. Act No XL, 2017		2018-19
Year and Program: 2018-19 F. Y. M.Sc.	School of Science	Department of Chemistry
Course Code: CHS 501	Course Title: Organic chemistry-I	Semester – Odd (I)
Day and Date: Saturday 01/06/2019	End Semester Examination	Time: 3 hrs, Max Marks: 100 11.00 am 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

		Marks	level	CO
Q.2	**Attempt any two of the following:**	**12**		
a)	What is carbocation? How they are generated? Discuss their characteristics.	6	L2	1
b)	What is S_N2 reaction? Explain S_N2 reaction with its mechanism. Give evidence of mechanism?	6	L2	1
c)	Identify following reaction. Predict the product, with appropriate reaction mechanism and give stereochemistry of products.	6	L3	1



Q.3	**Attempt any two of the following:**	**12**		
a)	What you think, what happens when benzene undergo following electrophilic substitution reaction? i) Halogenation. ii) Friedel-Crafts acylation.	6	L2	2
b)	Apply Vilsmeier-Haack reaction in the synthesis of o-formylation and p-formylation.	6	L3	2

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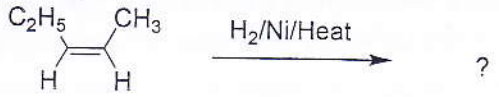
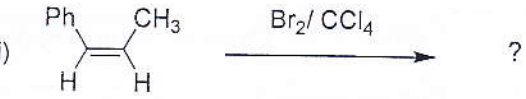
c) Predict the product of the following reaction and give stereochemistry of the product. 6 L3 2

i) 

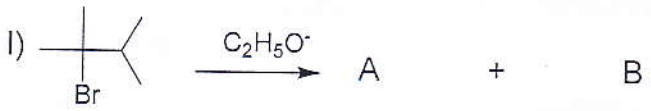
ii) 

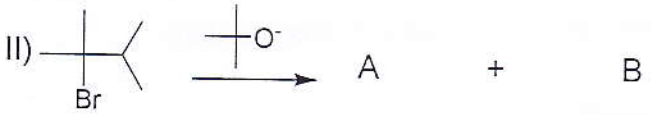
Q.4 a) Attempt any two of the following: 12

i) What is E2 reaction? Apply E2 reaction on 2-bromobutane, give major and minor product with explanation. 6 L3 3

ii) Compare E1, E2 and E1cb reaction 6 L4 3

iii) Interpret product A and B. Explain major and minor product. 6 L3 3

I) 

II) 

b) Write note on any four of the following rearrangement with application. 16

i) Hoffmann rearrangement. 4 L3 3

ii) Beckmann rearrangement. 4 L3 3

iii) Benzilic acid rearrangement. 4 L3 3

iv) Hofmann–Martius rearrangement. 4 L3 3

v) Photo-Fries rearrangement 4 L3 3

Q.5 a) Attempt any two of the following: 16

i) Assign *R* or *S* configuration to the following compounds. Justify. 8 L3 4

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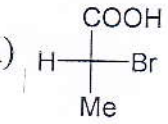
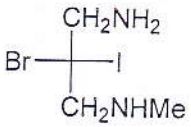
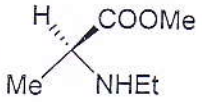
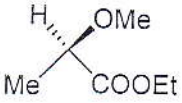
A) 

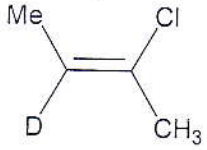
B) 

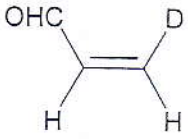
C) 

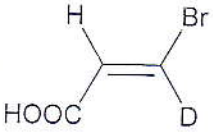
D) 

ii) Assign *E* or *Z* configuration to the following compounds. Explain. **8** L3 4

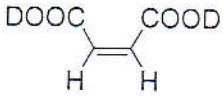
A) 

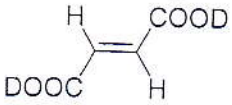
B) 

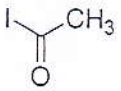
C) 

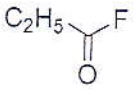
D) 

iii) Assign *Re* or *Si* configuration to the following compounds. Justify **8** L3 4

A) 

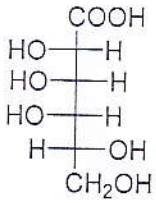
B) 

C) 

D) 

b) **Attempt any three of the following:** **12**

i) Assign the absolute configuration *R* and *S* to each chiral center in the following **4** L3 4



ii) Discuss sequence rule with example. **4** L2 4

iii) Draw threo-2,3 dichloro-3-phenylpropanoic acid (PhCHClCHClCOOH) in Fischer projection, sawhorse (eclipse) and Newman (eclipse) formulae **4** L4 4

iv) What is Isomerism? Give its types with example. Explain any one type of isomerism. **4** L2 4

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