QUIZ

CHAPTER: CARBOXYLIC ACID AND ITS DERIVATIVES

Time: 1 Hr **Marks: 73**

General Instructions:

1. Questions **1–6** are based on **Comprehension**, questions **7–13** have **Only one correct option** and questions **14–16** may have **More than one correct option** and question **17–18 are numerical with single digit integer type answer.** And question **19 is Matrix-Match type answer.**

Marking Scheme:

(a) For questions **1–6**, **+4** marks will be awarded for each **right** answer and **-2** marks will be deducted for each **wrong** answer.

(b) For questions **7–13**, **+3** marks will be awarded for each **right** answer and **-1** mark will be deducted for each **wrong** answer.

(c) For questions **14–16**, **+4** marks will be awarded for each **right** answer and **-2** marks will be deducted for each **wrong** answer.

(d) For questions **17–18**, **+4** marks will be awarded for each **right** answer and **0** marks will be deducted for each **wrong** answer.

(e) For questions **19, +2,** marks will be awarded for each **right** answer and **-1** mark will be deducted for each **wrong** answer.

COMPREHENSION – 1 (Only one correct option)

The carboxyl group is consist of two groups, namely, C = O and OH group. The OH group mainly undergoes change either by loss of H^+ or replacement by another group. However, the reactions of carboxylic acids are mainly influenced by the carbonyl group. The carbonyl group is also responsible for nucleophilic substitution reactions in acid derivatives.

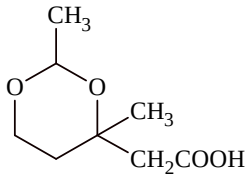
The presence of an electron withdrawing group increases the acidity of both aliphatic and aromatic acids. Whereas electron releasing groups impart opposite effect on the acid.

1. The higher acidity of RCOOH over ROH is due to the presence of
   (A) - OH (B) C = O
   (C) both (D) none of the above

2. Chloroacetic acid is more acidic than acetic acid because
   (A) electron withdrawing group destabilizes the acid
   (B) electron donating group stabilizes the acid
   (C) electron withdrawing group stabilizes the carboxylate ion
   (D) all of the above

COMPREHENSION – 2 (Only one correct option)

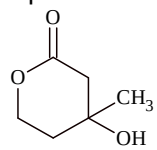
A research student has synthesized a compound A in the laboratory. The compound A is

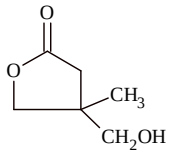


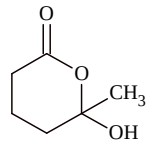
He wanted to study the compound in acidic medium and kept it in acid for some time. After some time, when isolated the compound, to his surprise, he got the mixture of two compounds B, C. He studied their properties and compared them with A.

	A	B	C
Reaction with $NaHCO_3$	Brisk effervescence	No	No
Blue litmus	Red	No	No
NaOI	No	No	Yellow ppt.
$[Ag(NH_3)_2]^+$	No	No	Silver mirror
Other information		$A \xrightarrow{H_3O^+} B + C$	C = 54.55% H = 9.1%

3. The compound B is

(A) 

(B) 

(C) 

(D) none of the above

4. B is formed due to

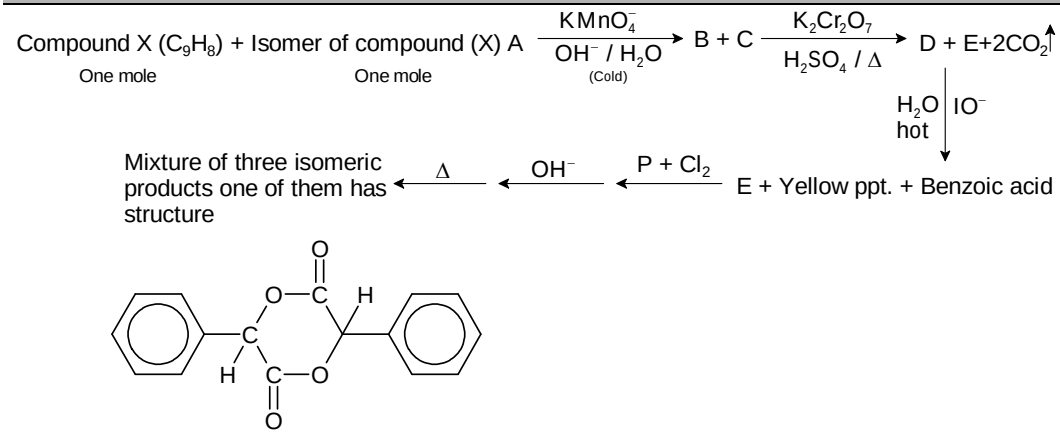
(A) cleavage of C – O bond followed by esterification

(B) decarboxylation of – COOH group

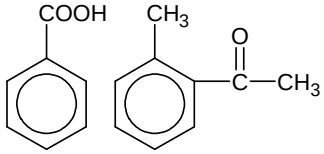
(C) oxidation of – CH_2COOH into – COOH group

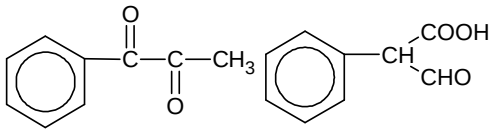
(D) none of the above

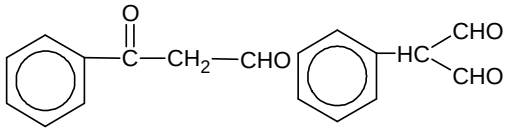
COMPREHENSION – 3 (Only one correct option)

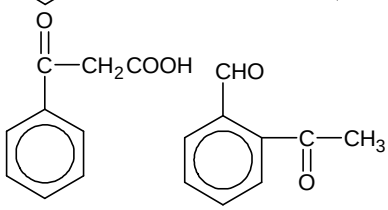


5. Compound B and C can be:

(A) 

(B) 

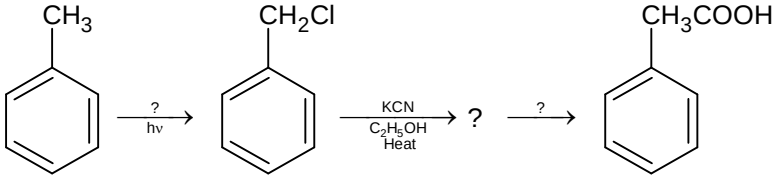
(C) 

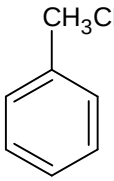
(D) 

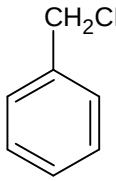
6. No. of possible stable aromatic structural forms of compound X is:
(A) 6 (B) 9
(C) 8 (D) 7

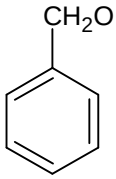
MULTIPLE CHOICE QUESTIONS (Only one correct option)

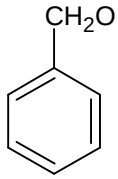
7. In the following series of transformations, provide the required information wherever a question mark (?) is indicated respectively.



(A) H_3O^+,  , Cl_2

(B) Cl_2,  , H_3O^+

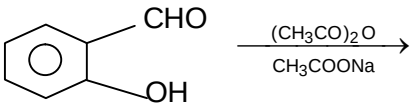
(C) HCl,  , H_3O^+

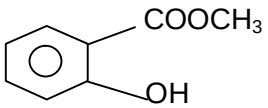
(D) Cl,  , HCl

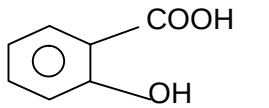
8. Reaction of acetyl chloride with acetic acid in presence of pyridine produces
(A) ethyl acetic acetate (B) acetyl chloride
(C) acetic anhydride (D) methyl acetate

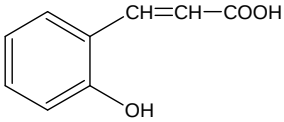
9. Acetamide is
(A) basic (B) acidic
(C) amphoteric (D) none of the above

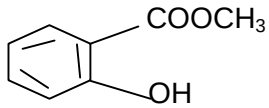
10. Predict the product obtained



(A) 

(B) 

(C) 

(D) 

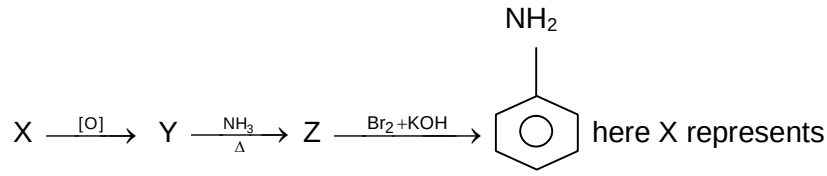
11. In benzilic acid rearrangement

(A) C_6H_5CHO is converted in to benzoin

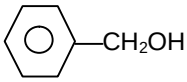
(B) benzoin is converted into benzilic acid

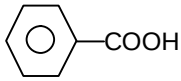
(C) benzilic acid is converted in to benzil

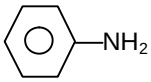
(D) benzil is converted into benzilic acid

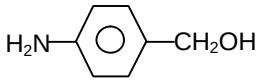
12. 

here X represents

(A) 

(B) 

(C) 

(D) 

13. Main product of the reaction $CH_3CONH_2 + HNO_2 \rightarrow$ is
(A) CH_3COOH (B) $CH_3CH_2NH_2$
(C) CH_3NH_2 (D) $CH_3COO\ NH_4$

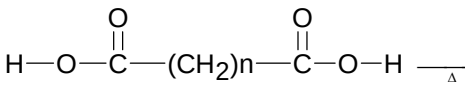
MULTIPLE CHOICE QUESTIONS (More than one correct option)

14. Oxalic acid is used:
(A) for removing ink stains
(B) for the lab preparation of formic acid and allyl alcohol
(C) in making beverages
(D) as a mordant in dyeing and calicoprinting

15. Which of the following acids are unsaturated one?
(A) Stearic acid (B) Acrylic acid
(C) Oleic acid (D) Crotonic acid

16. Reaction of R–COOH with N_3H gives RNH_2 as the main product. The intermediates involved in this reaction are:
(A) $RNHNH_2$ (B) $RCON_3$
(C) RNCO (D) $RCONH_2$

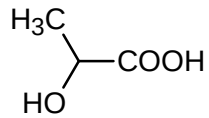
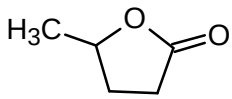
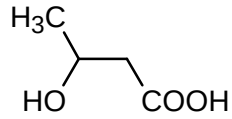
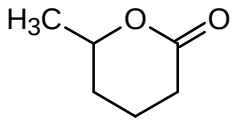
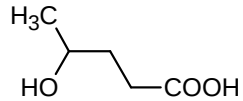
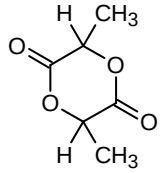
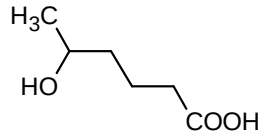
SINGLE INTEGER ANSWER TYPE

17. 
At what value of (n) of above compound will not evolve CO_2 gas.

18. Find the number of geometrical isomers of the given compound.
C_6H_5—CH=CH—CH—CH=CH—CH=CH—COOH

MATRIX-MATCH TYPE QUESTION

19. The compounds in column–A are heated and match the product formed and number of stereoisomers formed which are given in column–B

Column – I	Column – II
(A)  $(\pm)$	(p) 
(B) 	(q) 
(C) 	(r) 
(D) 	(s) 3
	(t) 2

ANSWERS

1.	**B**	2.	**D**	3.	**A**
4.	**A**	5.	**C**	6.	**D**
7.	**B**	8.	**C**	9.	**C**
10.	**C**	11.	**D**	12.	**A**
13.	**A**	14.	**A, B, D**	15.	**B, C, D**
16.	**B, C**	17.	**2**	18.	**8**

19. **A → r, s; B → t; C → p, t; D → q, t**