

NEET ALDEHYDES, KETONES AND CARBOXYLIC ACIDS — NUCLEOPHILIC ADDITION REACTIONS OF ALDEHYDES AND KETONES — PYQS

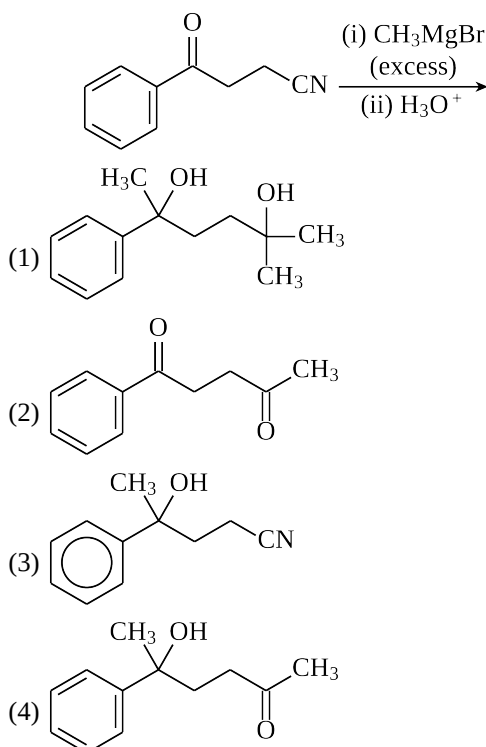
Max. Marks: 68

Questions: 17

Section A (MCQ) — 17 questions

Q.1 The major product of the following reaction is

[NEET (UG) 2025]



Scan or tap for the full solution



Q.2 Match List-I with List-II.

List-I (Products formed)		List-II (Reaction of carbonyl compound with)	
a.	Cyanohydrin	i.	NH_2OH
b.	Acetal	ii.	RNH_2
c.	Schiff's base	iii.	Alcohol
d.	Oxime	iv.	HCN

Choose the correct answer from the options given below

[NEET (UG) 2022]

- (1) (a) - (iii), (b) - (iv), (c) - (ii), (d) - (i)
 (2) (a) - (ii), (b) - (iii), (c) - (iv), (d) - (i)
 (3) (a) - (i), (b) - (iii), (c) - (ii), (d) - (iv)
 (4) (a) - (iv), (b) - (iii), (c) - (ii), (d) - (i)

Scan or tap for the full solution



Q.3 Which of the following reactions is not an example for nucleophilic addition-elimination reaction?

[NEET (UG) 2022 (Phase 2)]

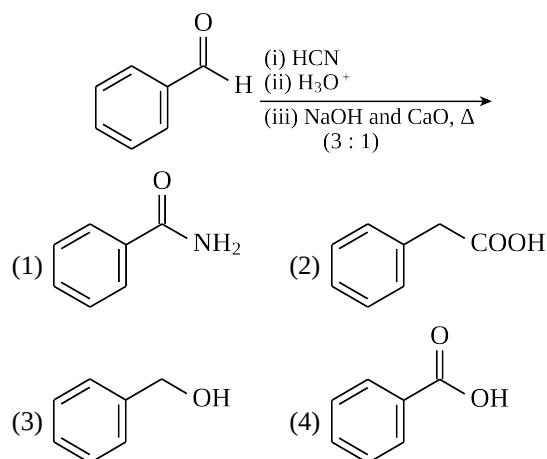
- (1) $\text{CH}_3\text{CHO} + \text{NH}_3 \rightleftharpoons \text{CH}_3\text{CH}=\text{NH} + \text{H}_2\text{O}$
 (2) $\text{CH}_3\text{CHO} + \text{NaHSO}_3 \rightleftharpoons \text{CH}_3-\text{C}(\text{OH})(\text{H})-\text{SO}_3\text{Na}$
 (3) $\text{CH}_3\text{CHO} + \text{NH}_2\text{OH} \rightleftharpoons \text{CH}_3\text{CH}=\text{N}-\text{OH} + \text{H}_2\text{O}$
 (4) $\text{CH}_3\text{CHO} + \text{C}_6\text{H}_5\text{NHNH}_2 \rightleftharpoons \text{CH}_3\text{CH}=\text{N}-\text{NHC}_6\text{H}_5 + \text{H}_2\text{O}$

Scan or tap for the full solution



Q.4 The product formed from the following reaction sequence is

[NEET (UG) 2022 (Phase 2)]



Scan or tap for the full solution



Q.5 Which of the following reagents would distinguish cis-cyclopentane-1,2-diol from the trans-isomer?

[NEET 2016 (Phase 1)]

- (1) MnO_2
- (2) Aluminium isopropoxide
- (3) Acetone
- (4) Ozone

Scan or tap for the full solution



Q.6 The product formed by the reaction of an aldehyde with a primary amine is [NEET 2016 (Phase 1)]

- (1) carboxylic acid
- (2) aromatic acid
- (3) Schiff's base
- (4) ketone

Scan or tap for the full solution



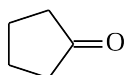
Q.7 Reaction of a carbonyl compound with one of the following reagents involves nucleophilic addition followed by elimination of water. The reagent is [AIPMT 2015]

- (1) hydrazine in presence of feebly acidic solution
- (2) hydrocyanic acid
- (3) sodium hydrogen sulphate
- (4) a Grignard reagent.

Scan or tap for the full solution



Q.8 Treatment of cyclopentanone with methyl lithium gives which of the following species? [AIPMT 2015 (Cancelled)]



- (1) Cyclopentanonyl radical
- (2) Cyclopentanonyl biradical
- (3) Cyclopentanonyl anion
- (4) Cyclopentanonyl cation

Scan or tap for the full solution



Q.9 Which one is most reactive towards nucleophilic addition reaction? [AIPMT 2014]

- (1)
- (2)
- (3)
- (4)

Scan or tap for the full solution



Q.10 Consider the reaction :
 $\text{RCHO} + \text{NH}_2\text{NH}_2 \longrightarrow \text{RCH}=\text{N}-\text{NH}_2$
 What sort of reaction is it? [AIPMT 2012 (Mains)]

- (1) Electrophilic addition-elimination reaction
- (2) Free radical addition-elimination reaction
- (3) Electrophilic substitution-elimination reaction
- (4) Nucleophilic addition-elimination reaction

Scan or tap for the full solution



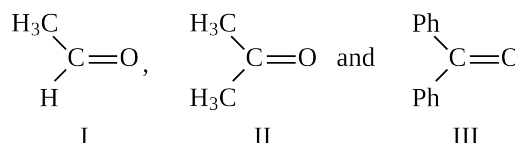
Q.11 Acetone is treated with excess of ethanol in the presence of hydrochloric acid. The product obtained is [AIPMT 2012 (Prelims)]

- (1) $\text{CH}_3\text{CH}_2\text{CH}_2-\overset{\text{O}}{\parallel}{\text{C}}-\text{CH}_3$
- (2) $\text{CH}_3\text{CH}_2\text{CH}_2-\overset{\text{O}}{\parallel}{\text{C}}-\text{CH}_2\text{CH}_2\text{CH}_3$
- (3) $(\text{CH}_3)_2\text{C} \begin{matrix} \text{OH} \\ \text{OC}_2\text{H}_5 \end{matrix}$
- (4) $(\text{CH}_3)_2\text{C} \begin{matrix} \text{OC}_2\text{H}_5 \\ \text{OC}_2\text{H}_5 \end{matrix}$

Scan or tap for the full solution



Q.12 The order of reactivity of phenyl magnesium bromide (PhMgBr) with the following compounds: [AIPMT 2011 (Mains)]



- (1) $\text{III} > \text{II} > \text{I}$
- (2) $\text{II} > \text{I} > \text{III}$
- (3) $\text{I} > \text{III} > \text{II}$
- (4) $\text{I} > \text{II} > \text{III}$

Scan or tap for the full solution



Q.13 A carbonyl compound reacts with hydrogen cyanide to form cyanohydrin which on hydrolysis forms a racemic mixture of α -hydroxy acid. The carbonyl compound is [AIPMT 2006]

- (1) formaldehyde
- (2) acetaldehyde
- (3) acetone
- (4) diethyl ketone

Scan or tap for the full solution



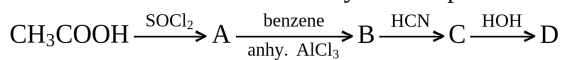
Q.14 Nucleophilic addition reaction will be most favoured in [AIPMT 2006]

- (1) CH_3CHO
- (2) $\text{CH}_3-\text{CH}_2-\text{CH}_2-\overset{\text{O}}{\parallel}{\text{C}}-\text{CH}_3$
- (3) $(\text{CH}_3)_2\text{C}=\text{O}$
- (4) $\text{CH}_3\text{CH}_2\text{CHO}$

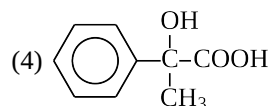
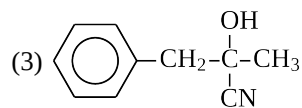
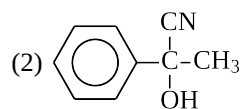
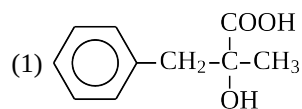
Scan or tap for the full solution



Q.15 In a set of reactions acetic acid yielded a product D.



The structure of D would be [AIPMT 2005]

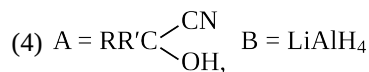
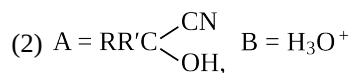
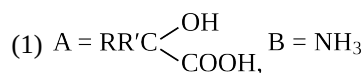
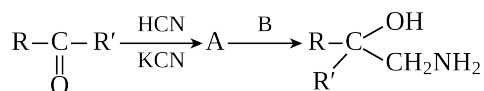


Scan or tap for the full solution



Q.16 A and B in the following reactions are :

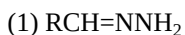
[AIPMT 2003]



Scan or tap for the full solution



Q.17 First product of the reaction between RCHO and NH_2NH_2 is [AIPMT 2000]



Scan or tap for the full solution



ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9	10	11
Ans.	4	4	2	3	3	3	1	3	4	4	4
Ques.	12	13	14	15	16	17					
Ans.	4	2	1	4	4	1					