**Q1 - 2024 (04 Apr Shift 1)**

Given below are two statements :

Statements I : Acidity of $\alpha$-hydrogens of aldehydes and ketones is responsible for Aldol reaction. Statement II : Reaction between benzaldehyde and ethanal will NOT give Cross - Aldol product. In the light of the above statements, choose the most appropriate answer from the options given below :

(1) Statement I is correct but Statement II is incorrect

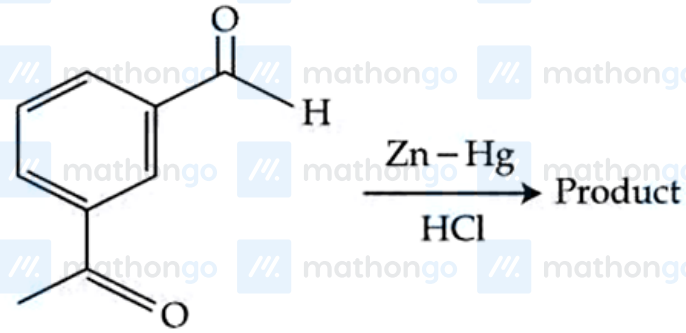
(2) Both Statement I and Statement II are correct

(3) Both Statement I and Statement II are incorrect

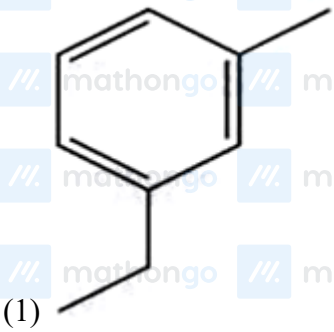
(4) Statement I is incorrect but Statement II is correct

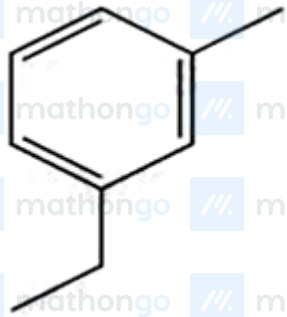
**Q2 - 2024 (04 Apr Shift 1)**

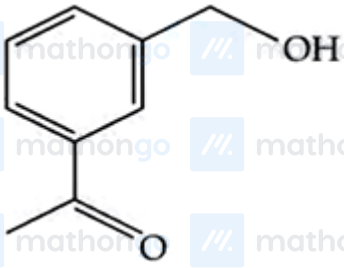
Identify the product in the following reaction :

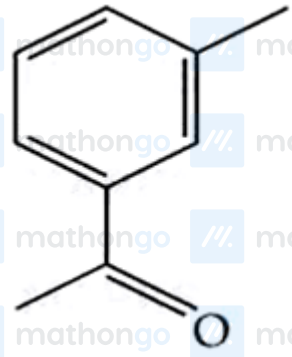



(1)



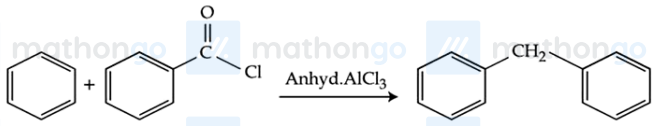
(2) 

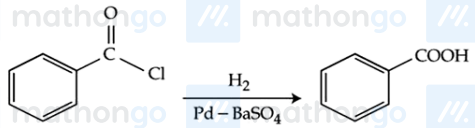
(3) 

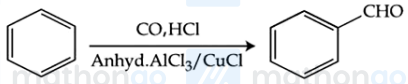

(4) 

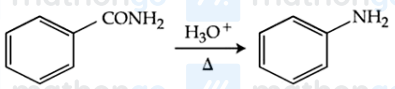

**Q3 - 2024 (04 Apr Shift 1)**

The number of the correct reaction(s) among the following is _____

(A) 

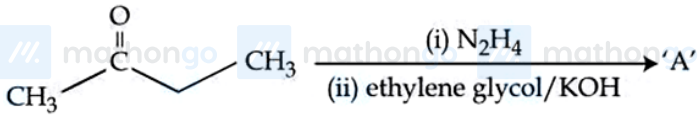

(B) 

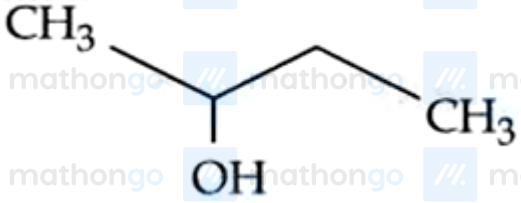

(C) 


(D) 

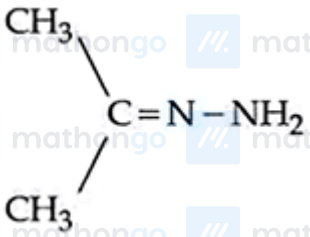

**Q4 - 2024 (05 Apr Shift 1)**

Identify ' $A$ ' in the following reaction:

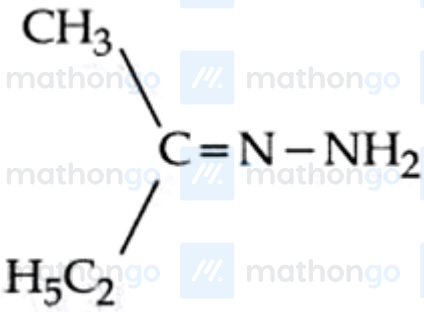


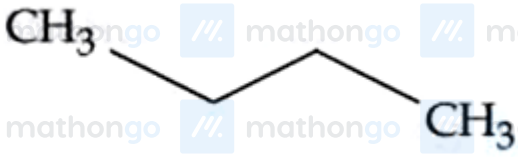

(1)




(2)




(3)



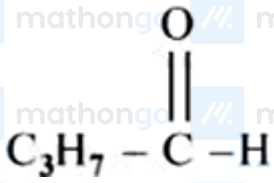

(4)

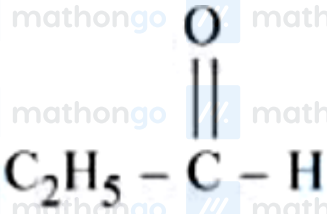
**Q5 - 2024 (05 Apr Shift 2)**

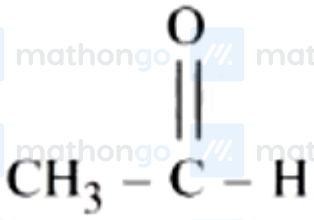
In the Claisen-Schmidt reaction to prepare 351 g of dibenzalacetone using 87 g of acetone, the amount of benzaldehyde required is _____ g. (Nearest integer)

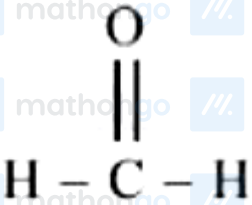
**Q6 - 2024 (06 Apr Shift 1)**

Which among the following aldehydes is most reactive towards nucleophilic addition reactions?

(1) 

(2) 

(3) 

(4) 

**Q7 - 2024 (08 Apr Shift 2)**

Match List - I with List - II.

| | (Test) | | (Identification) |
|---|---|---|---|
| (A) | Bayer's test MARKS | (I) | Phenol VIARKS |
| (B) | Ceric ammonium nitrate test | (II) | Aldehyde |
| (C) | Phthalein dye test *R* K | (III) | Alcoholic-OH group |
| (D) | Schiff's test | (IV) | Unsaturation |

Choose the correct answer from the options given below :

(1) (A)-(IV), (B)-(III), (C)-(I), (D)-(II)

(2) (A)-(II), (B)-(III), (C)-(IV), (D)-(I)

(3) (A)-(IV), (B)-(I), (C)-(II), (D)-(III)

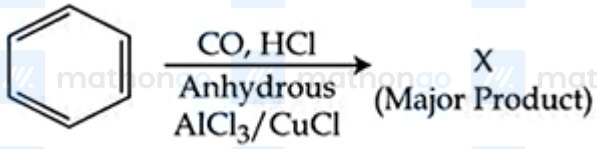
(4) (A)-(III), (B)-(I), (C)-(IV), (D)-(II)

**Q8 - 2024 (08 Apr Shift 2)**

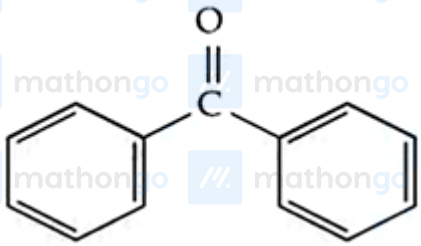
Two moles of benzaldehyde and one mole of acetone under alkaline conditions using aqueous NaOH after heating gives $x$ as the major product. The number of $\pi$ bonds in the product $x$ is _____

**Q9 - 2024 (09 Apr Shift 1)**

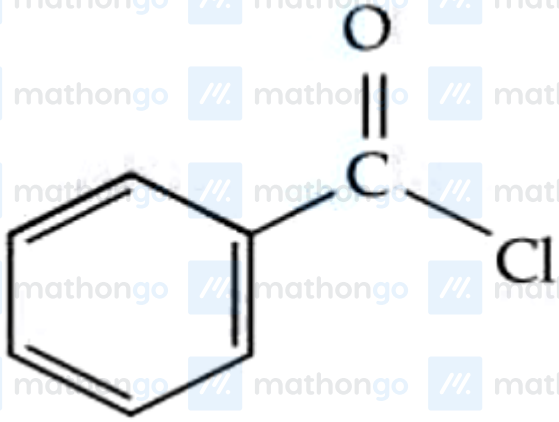
Identify major product " X " formed in the following reaction :



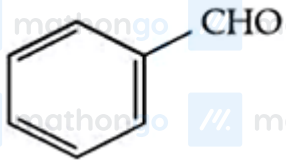

(1)



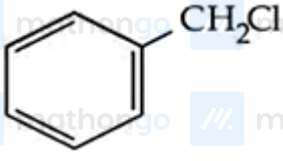

(2)




(3)




(4)




**Q10 - 2024 (09 Apr Shift 2)**

Match List I with List II

| | List - I (Test) | | List - II (Observation) |
|---|---|---|---|
| A. | $Br_2$ water test | I. | Yellow orange or orange red precipitate formed |
| B. | Ceric ammonium nitrate test | II. | Reddish orange colour disappears |
| C. | Ferric chloride test | III. | Red colour appears |
| D. | 2, 4 - DNP test | IV. | Blue, Green, Violet or Red colour appear |

Choose the correct answer from the options given below:

(1) A-III, B-IV, C-I, D-II

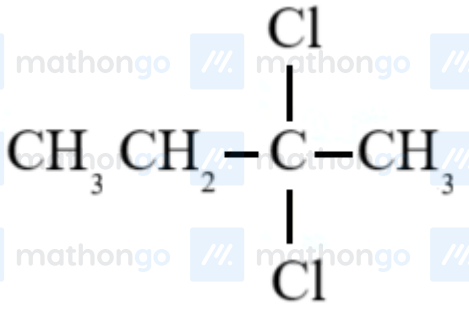
(2) A-I, B-II, C-III, D-IV

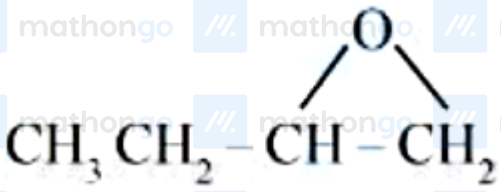
(3) A-IV, B-I, C-II, D-III

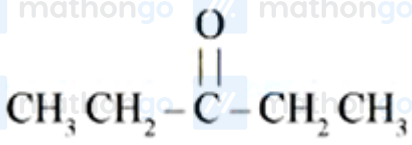
(4) A-II, B-III, C-IV, D-I

**Q11 - 2024 (09 Apr Shift 2)**

Which of the following compound can give positive iodoform test when treated with aqueous KOH solution followed by potassium hypoiodite.

(1) 

(2) 

(3) 

(4) $CH_3CH_2CH_2CHO$

**Q12 - 2024 (09 Apr Shift 2)**

Which of the following compounds will give silver mirror with ammoniacal silver nitrate?

A. Formic acid

B. Formaldehyde

C. Benzaldehyde

D. Acetone

Choose the correct answer from the options given below :

(1) A, B and C only

(2) C and D only

(3) B and C only

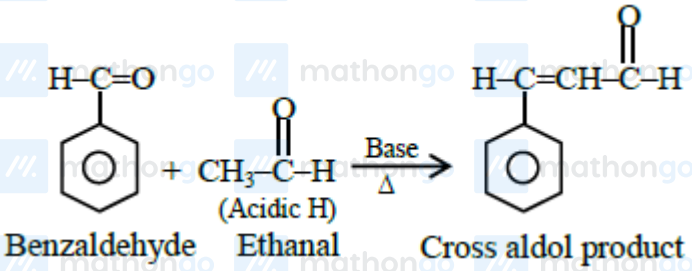
(4) A only

# Answer Key

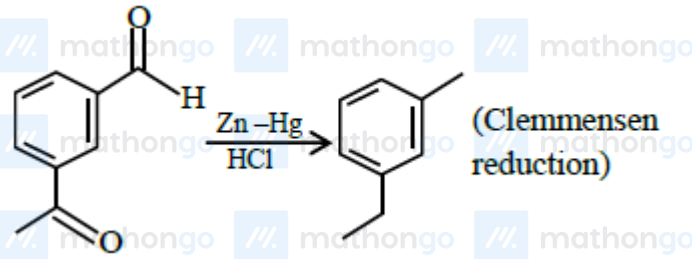
| | | | |
|---|---|---|---|
| **Q1** (1) | **Q2** (1) | **Q3** (1) | **Q4** (4) |
| **Q5** (318) | **Q6** (4) | **Q7** (1) | **Q8** (9) |
| **Q9** (3) | **Q10** (4) | **Q11** (1) | **Q12** (1) |

**Q1**

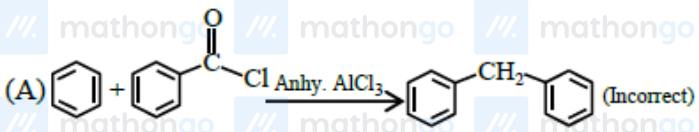
Aldehyde and ketones having acidic $\alpha$-hydrogen show aldol reaction

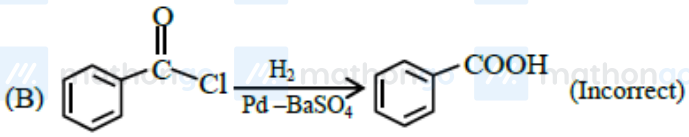


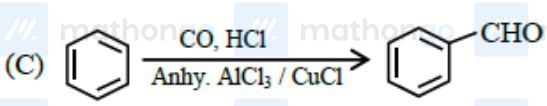

**Q2**

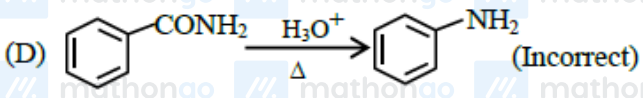



**Q3**

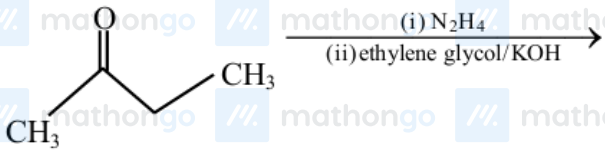


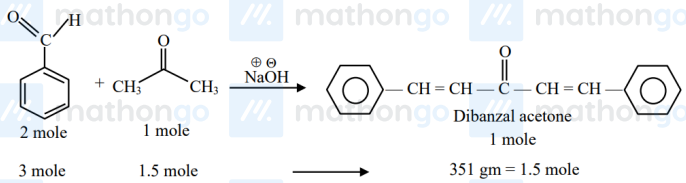

**Q4**




– Wolf kishner reduction.

**Q5**

Claisen Schmidt reaction




mw of benzaldehyde = 106

106 × 3 = 318gm. Benzaldehyde is required to give 1.5 mole (or 351gm ) product

**Q6**

$H-\overset{\overset{O}{\|}}{C}-H$ has low steric hindrance at carbonyl carbon and high partial positive charge at carbonyl carbon.

**Q7**

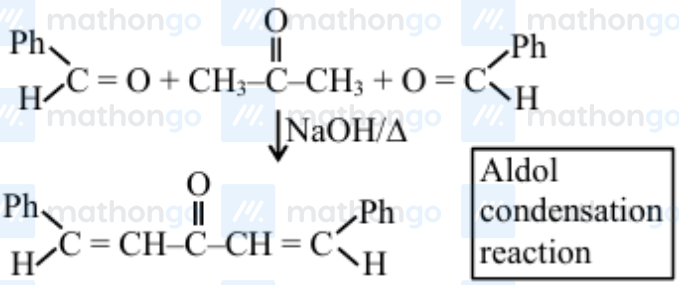
(A) Bayer's test → Unsaturation

(B) Ceric ammonium nitrate test → Alcoholic-OH group

(C) Phthalein dye test → Phenol

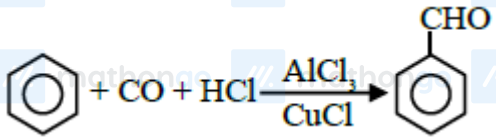
(D) Schiff's test → Aldehyde

**Q8**




**Q9**

This is Gattermann-Koch reaction




**Q10**

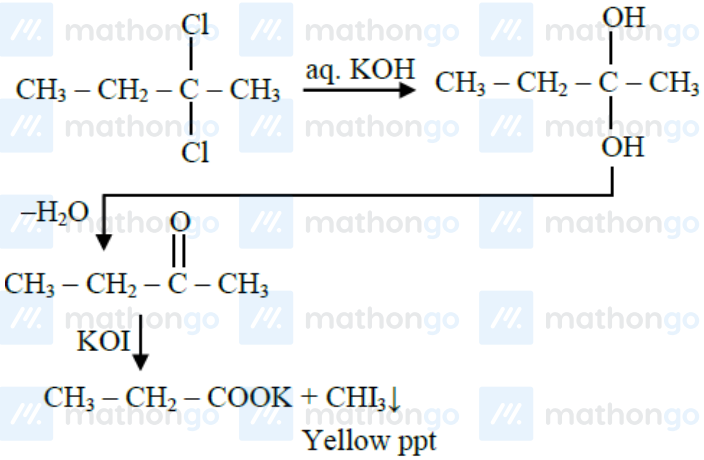
(A) $Br_2$ water test is test of unsaturation in which reddish orange colour of bromine water disappears.

(B) Alcohols given Red colour with ceric ammonium nitrate.

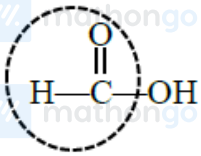
(C) Phenol gives Violet colour with natural ferric chloride.

(D) Aldehyde & Ketone give Yellow/Orange/Red Colour compounds with 2, 4-DNP i.e., 2, 4-Dinitrophenyl hydrazine.

**Q11**




**Q12**

Apart from aldehyde, Formic acid 

also gives silver mirror test with ammonical silver nitrate.