Q1 - 24 June - Shift 1

The major product 'A' of the following given reaction has _____ sp^2 hybridized carbon atoms.

2,7 – Dimethyl1 – 2, 6 – octadiene

$\xrightarrow{H^+}$ A
Mojor Pr oduct

Space for your notes:

Q2 - 24 June - Shift 2

Given below are two statements.

Statement I : The presence of weaker π- bonds make alkenes less stable than alkanes.

Statement II : The strength of the double bond is greater than that of carbon-carbon single bond.

In the light of the above statements, choose the *correct* answer from the options given below.

(A) Both Statement I and Statement II are correct.

(B) Both Statement I and Statement II are incorrect.

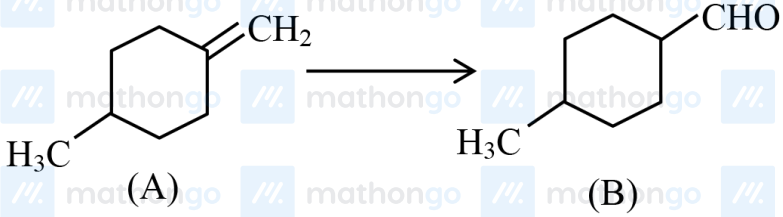
(C) Statement I is correct but Statement II is incorrect.

(D) Statement I is incorrect but Statement II is correct.

Space for your notes:

Q3 - 24 June - Shift 2

Which of the following reagents/ reactions will convert 'A' to 'B'?



(A) (B)

(A) PCC oxidation

(B) Ozonolysis

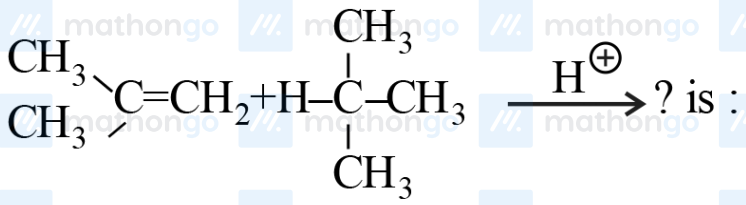
(C) $BH_3, H_2O_2 / {}^{-}OH$ followed by PCC oxidation

(D)HBr, hydrolysis followed by oxidation by $K_2Cr_2O_7$.

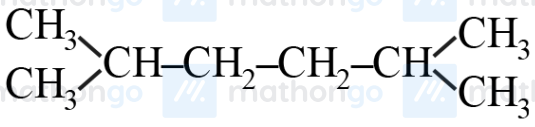
Space for your notes:

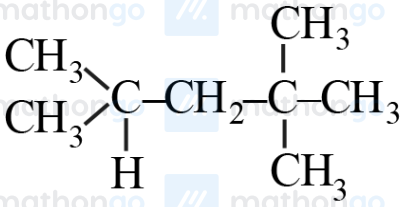
Q4 - 25 June - Shift 1

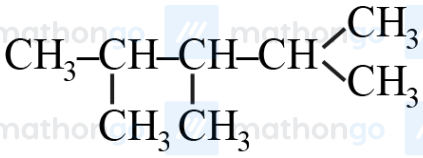
The products formed in the following reaction.

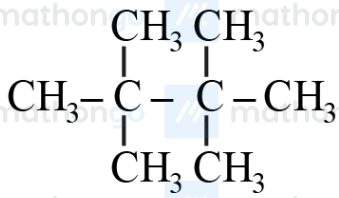


? is :

(A) 

(B) 

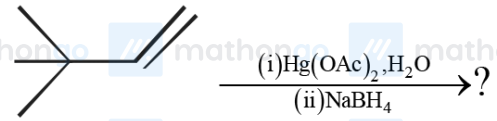
(C) 

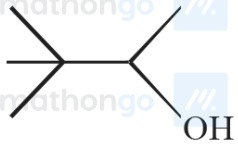
(D) 

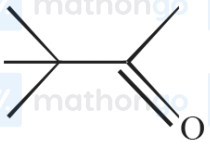
Space for your notes:

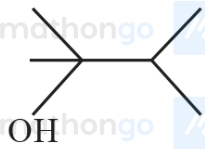
Q5 - 26 June - Shift 2

The major product in the following reaction



(1) 

(2) 

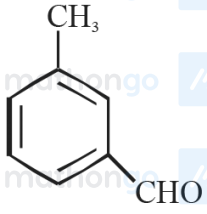
(3) 

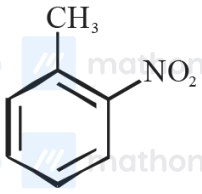
(4) 

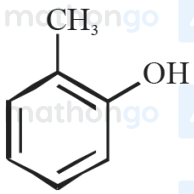
Space for your notes:

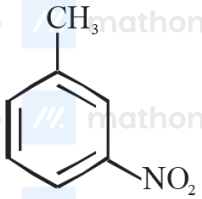
Q6 - 26 June - Shift 2

Halogenation of which one of the following will yield m-substituted product with respect to methyl group as a major product?

(1) 

(2) 

(3) 

(4) 

Space for your notes:

Q7 - 27 June - Shift 1

'**A**' and '**B**' respectively are:

A $\xrightarrow[(2)\,Zn-H_2O]{(1)O_3}$ Ethane-1,2-dicarbaldehyde + Glyoxal/Oxaldehyde

B $\xrightarrow[(2)\,Zn-H_2O]{(1)O_3}$ 5-oxohexanal

(A) 1-methylcyclohex-1, 3-diene & cyclopentene

(B) Cyclohex-1, 3-diene & cyclopentene

(C) 1-methylcyclohex-1,4-diene & 1-methylcyclopent-1-ene

(D) Cyclohex-1,3-diene & 1-methylcyclopent-1-ene

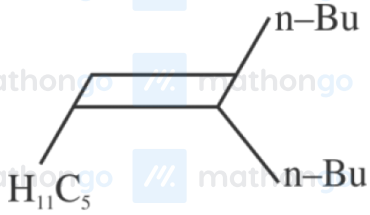
Space for your notes:

Q8 - 27 June - Shift 2

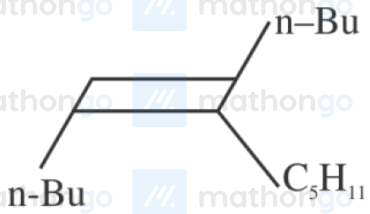
What will be the major product of following sequence of reactions?

$$n-Bu-\equiv \xrightarrow[\text{(ii) Lindlar cat, } H_2]{\text{(i) } n-BuLi,\ n-C_5H_{11}Cl}$$

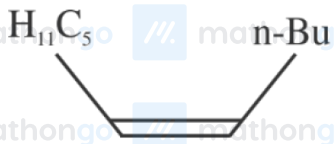
(A)



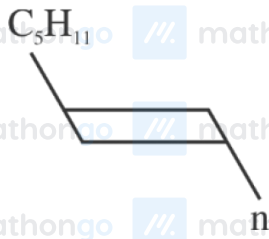
(B)



(C)



(D)

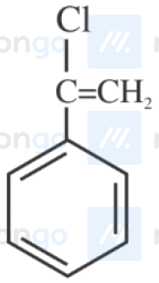
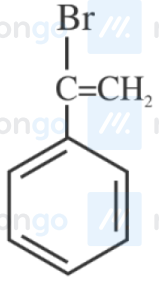
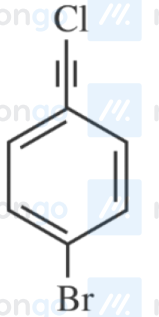
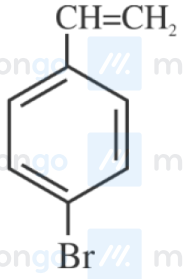


Q9 - 27 June - Shift 2

Space for your notes:

Product 'A' of following sequence of reactions is

Ethylbenzene $\xrightarrow[(b)\ Cl_2,\ \Delta]{(a)\ Br_2.Fe} \xrightarrow[(c)\ alc.\ KOH]{} 'A'$ (Major product)

(A)	
(B)	
(C)	
(D)	

Space for your notes:

Q10 - 29 June - Shift 1

Two isomers 'A' and 'B' with molecular formula C_4H_8 give different products on oxidation with $KMnO_4$ in acidic medium. Isomer 'A' on reaction with $KMnO_4/H^+$ results in effervescence of a gas and gives ketone. The compound 'A' is

(A) But-1-ene (B) cis-But-2-ene

(C) trans-But-2ene (D) 2-methyl propene

Space for your notes:

Q11 - 29 June - Shift 2

In Friedel-Crafts alkylation of aniline, one gets :

(A) alkylated product with ortho and para substitution.

(B) secondary amine after acidic treatment.

(C) an amide product.

(D) positively charged nitrogen at benzene ring.

Space for your notes:

Answer Key

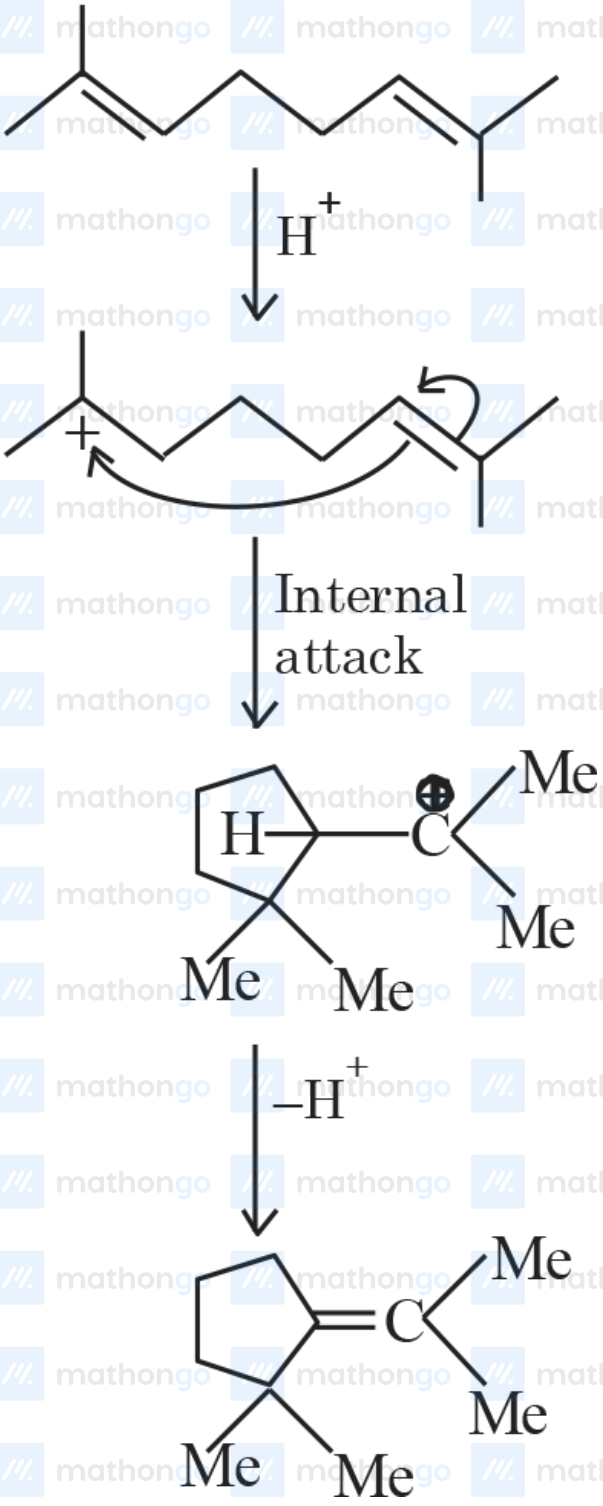
Q1 (2) **Q2** (A) **Q3** (C) **Q4** (B)

Q5 (A) **Q6** (C) **Q7** (D) **Q8** (C)

Q9 (D) **Q10** (D) **Q11** (D)

Q1 (2)

Answer (2)

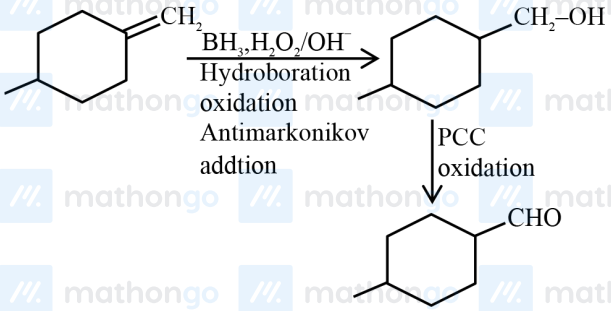


Q2 (A)

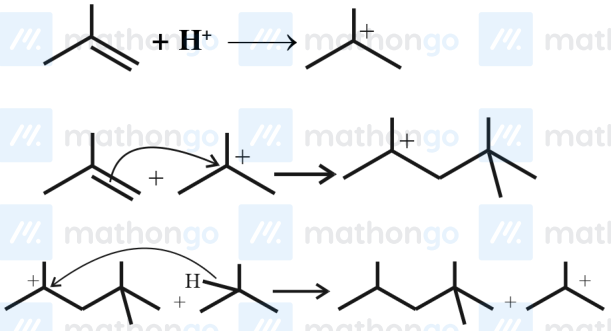
(A)

Q3 (C)

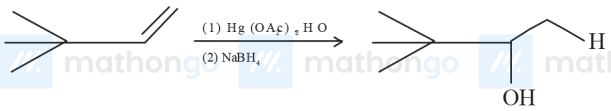
BH_3, $H_2O_2/^-OH$ followed by PCC oxidation.



Q4 (B)



Q5 (A)

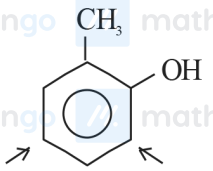


Oxymercuration – Demercuration
Addition of H_2O
Markovnikov's addition without rearrangement

Q6 (C)

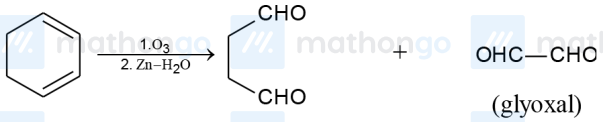
Electrophile will attack at ortho and para position with respect to better electron releasing group (ERG)

ERG : $-OH > -CH_3$

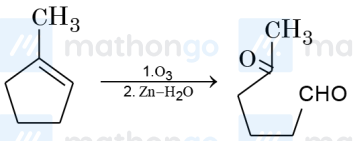


Para position with respect to $-OH$ (+R) group and it will be meta position with respect to $-CH_3$ group.

Q7 (D)

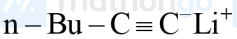


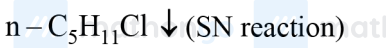
ethane-1, 2-dicarbaldehyde

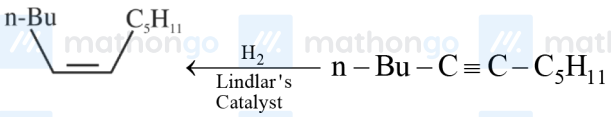


5-oxohexanal

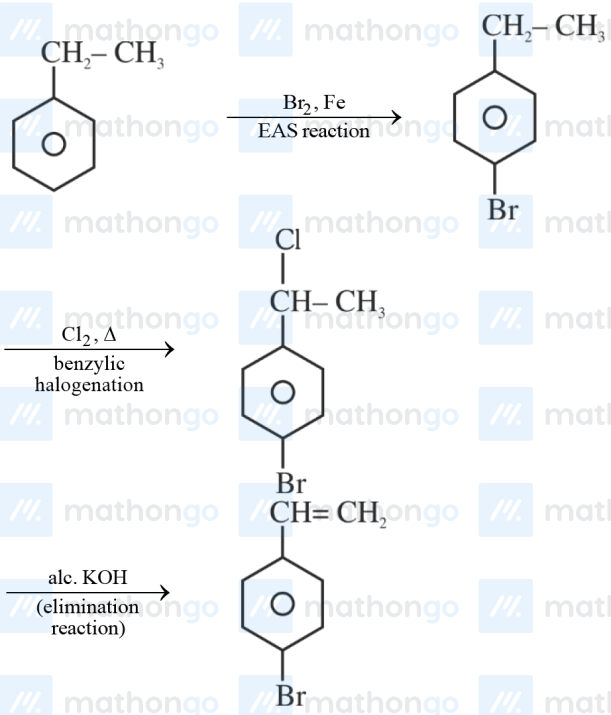
Q8 (C)



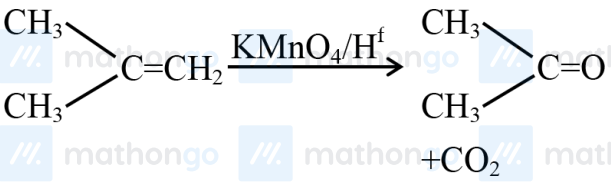




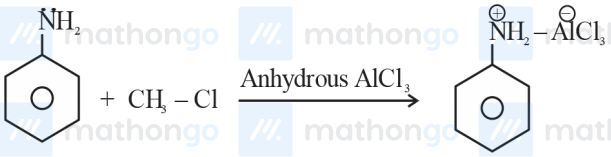
Q9 (D)


CH2– CH3
Br2, Fe
EAS reaction
CH2– CH3
Br
Cl2, Δ
benzylic
halogenation
Cl
CH– CH3
Br
alc. KOH
(elimination
reaction)
CH= CH2
Br

Q10 (D)


CH3
CH3
C=CH2
KMnO4/H+
CH3
CH3
C=O
+CO2

Q11 (D)


NH2
+ CH3 – Cl
Anhydrous AlCl3
NH2 – AlCl3