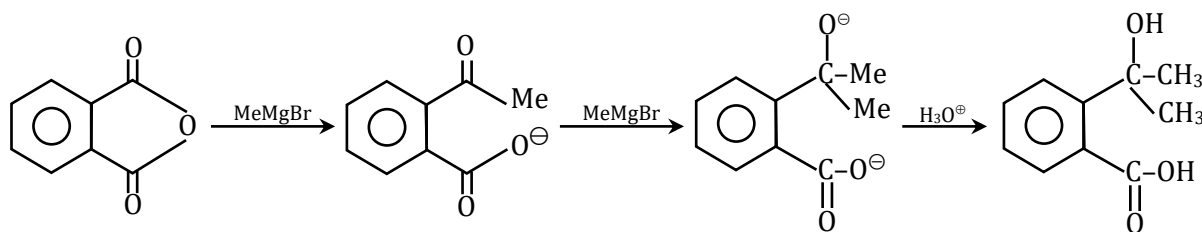
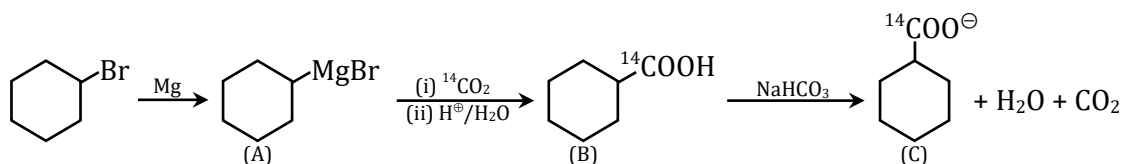


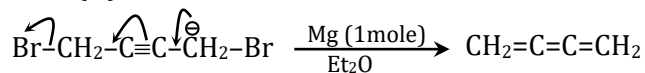
11. Ans. (D)



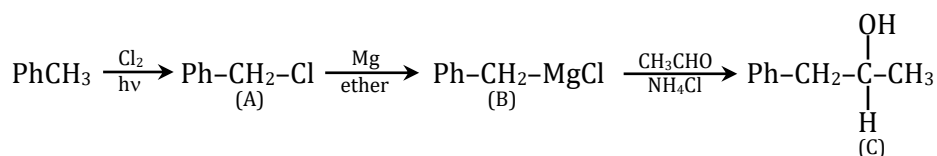
12. Ans. (C)



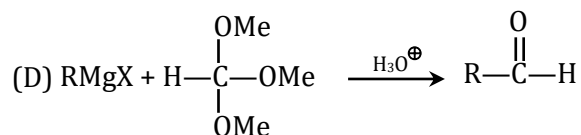
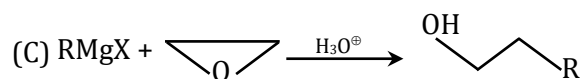
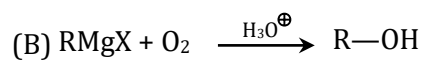
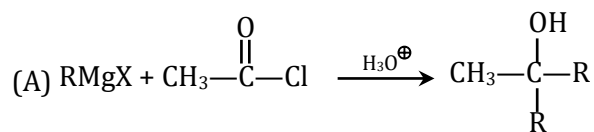
13. Ans. (D)



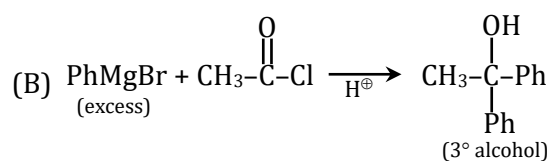
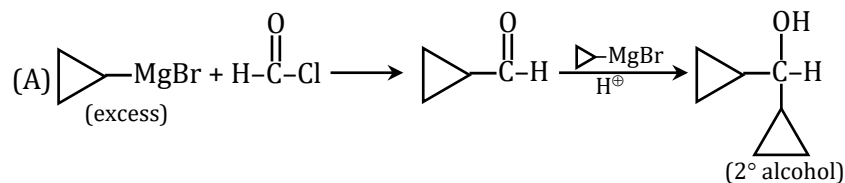
14. Ans. (A)

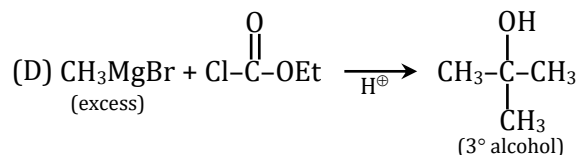
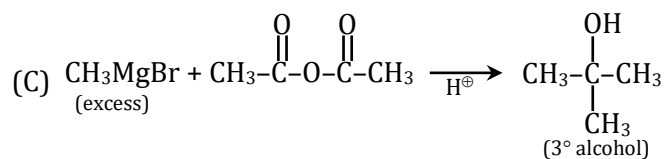


15. Ans. (A,B,C)

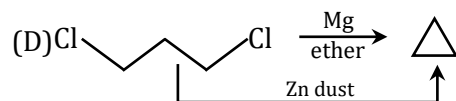
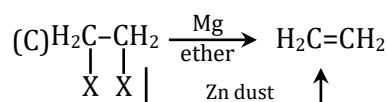
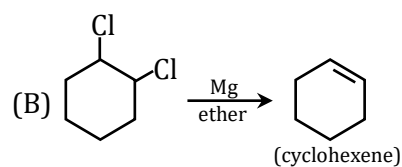
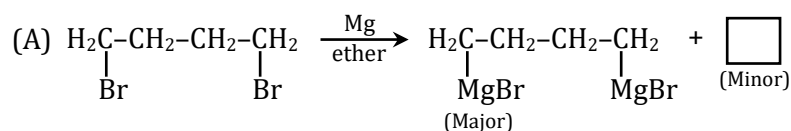


16. Ans. (B,C,D)



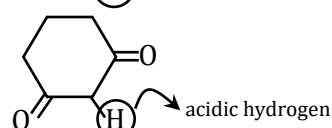
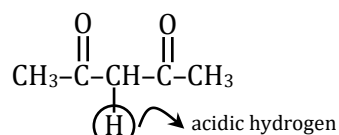


17. Ans. (A,B,C,D)

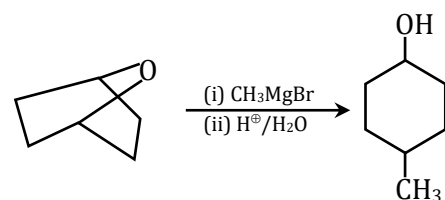


18. Ans. (B,D)

Compound have acidic hydrogen don't show nucleophilic addition with RMgX.



19. Ans. (B,C)



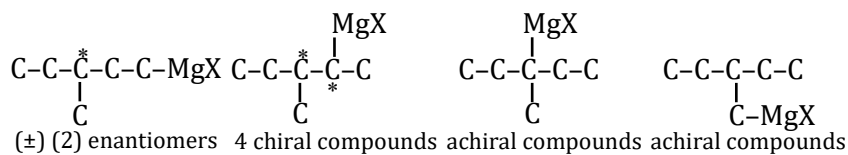
Product contains plane of symmetry (P.O.S.)

It shows Geometrical isomerism (G.I.)

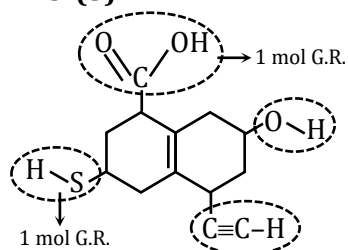
Optically inactive

EXERCISE - S

1. Ans. (8)



2. Ans. (3)



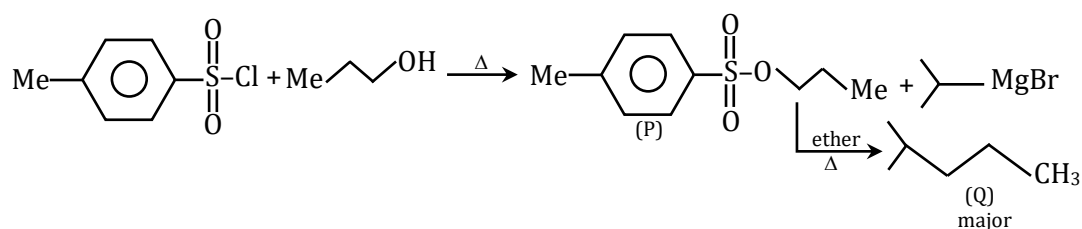
Acidity order of hydrogen

1 > 2 > 3 > 4

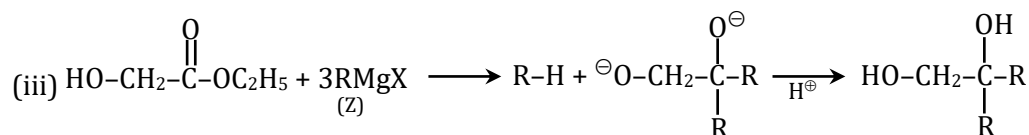
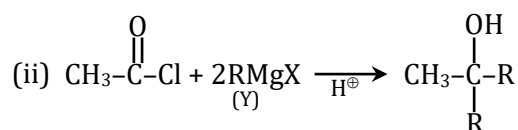
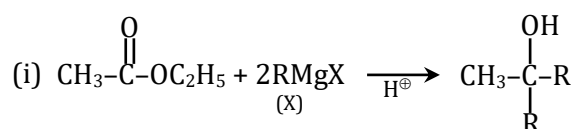
From 1 and 2 deprotonation takes place.

and their sum is 3.

3. Ans. (0)

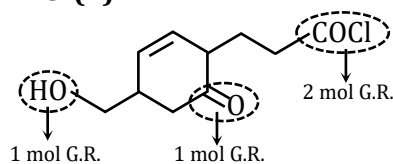


4. Ans. (7)



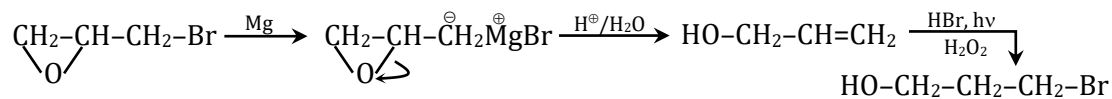
$$X + Y + Z = 2 + 2 + 3 = 7$$

5. Ans. (4)

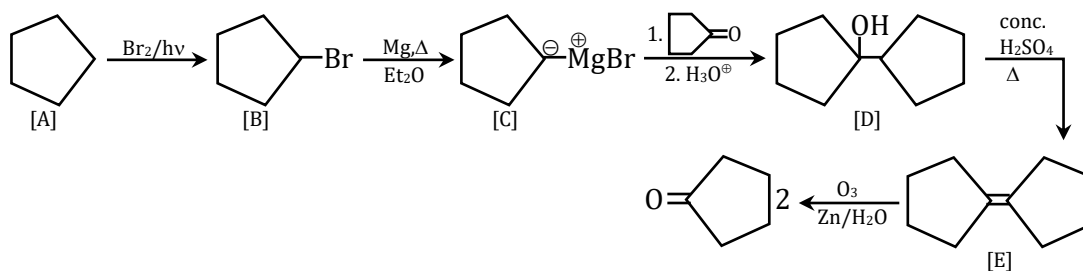


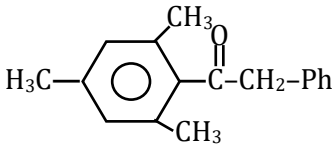
Total G.R. = 1 + 1 + 2 = 4 G.R.

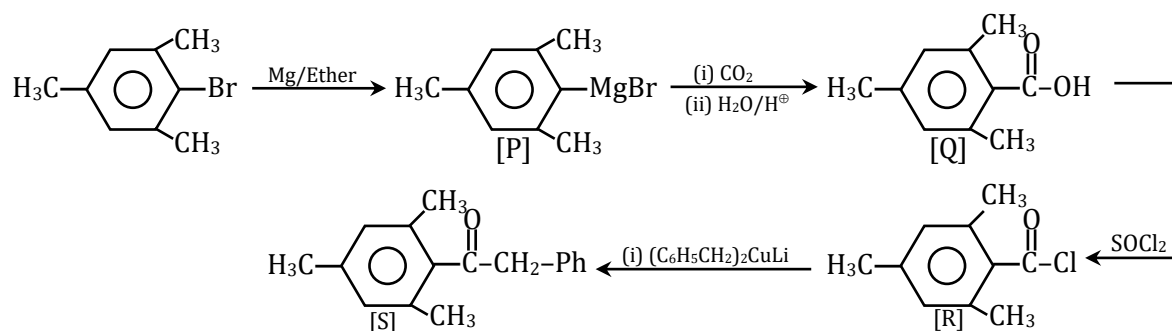
6. **Ans.** HO-H₂C-CH₂-CH₂-Br

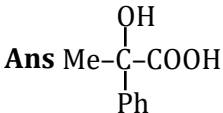


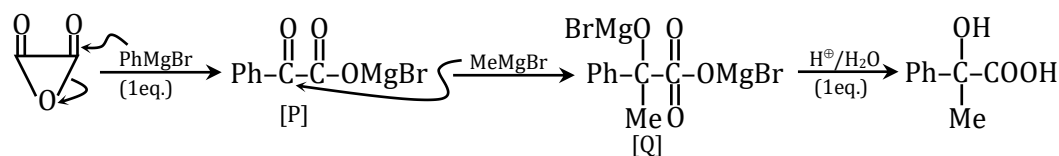
7. **Ans.** 



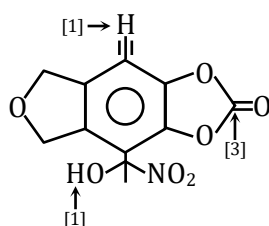
8. **Ans.** 



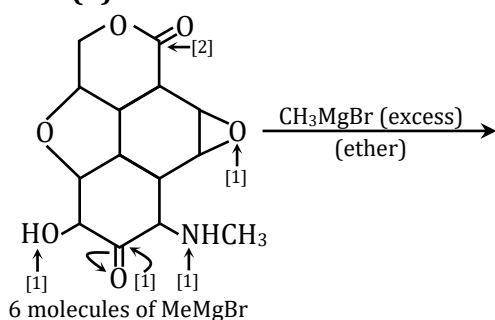
9. **Ans** 



10. **Ans. (5)**

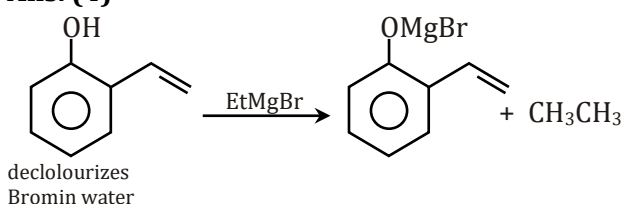


11. Ans. (6)



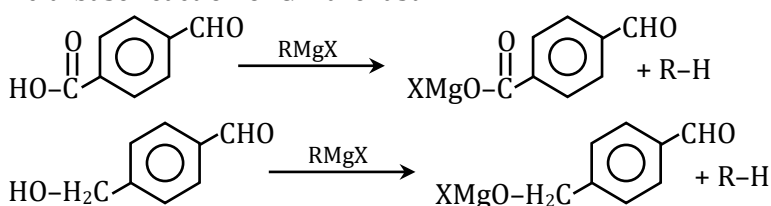
EXERCISE - JEE (Main) PYQ

1. Ans. (4)

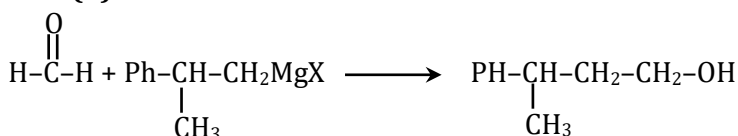


2. Ans. (2)

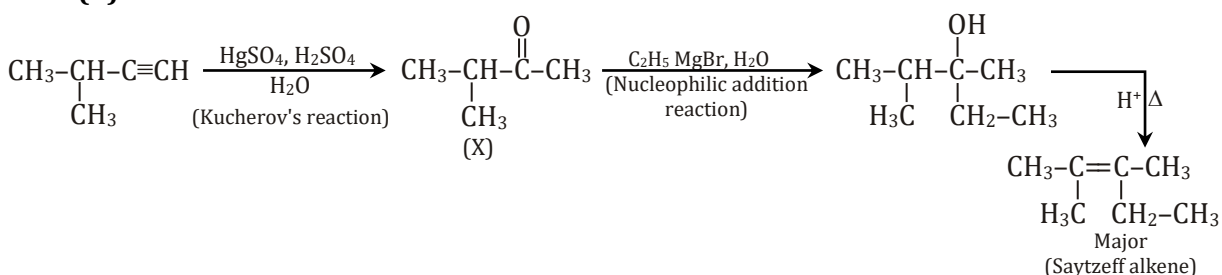
Acid-base reaction of G.R are fast.



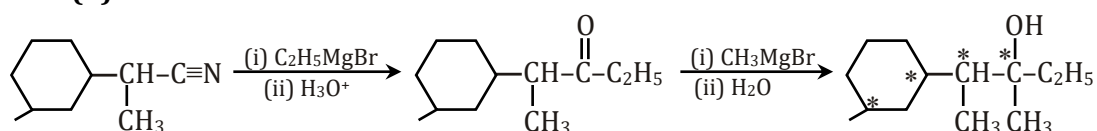
3. Ans. (1)



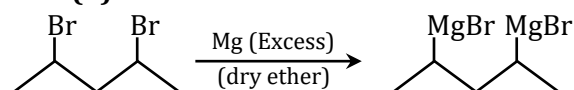
4. Ans. (3)



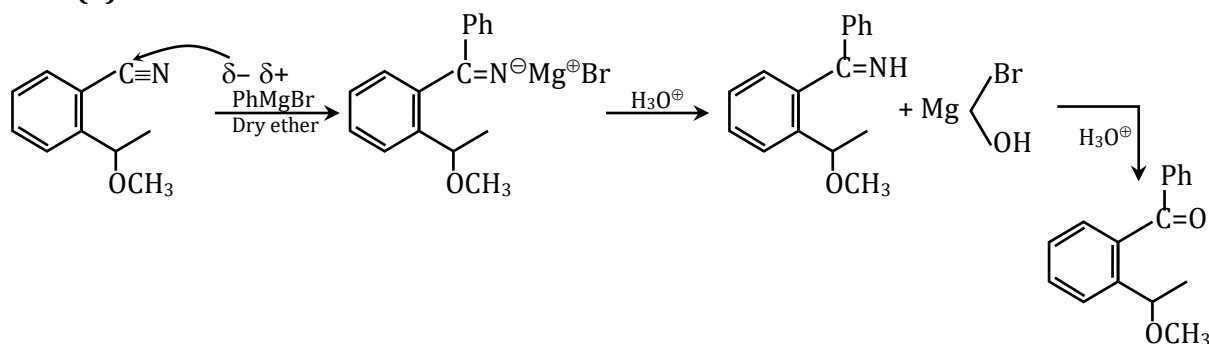
5. Ans. (4)



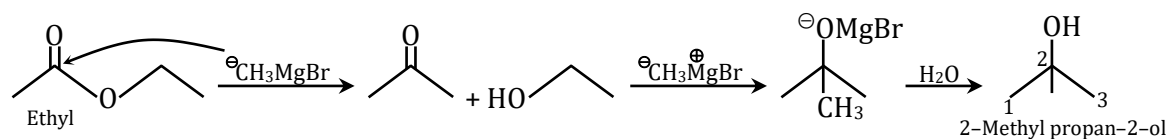
6. Ans. (4)



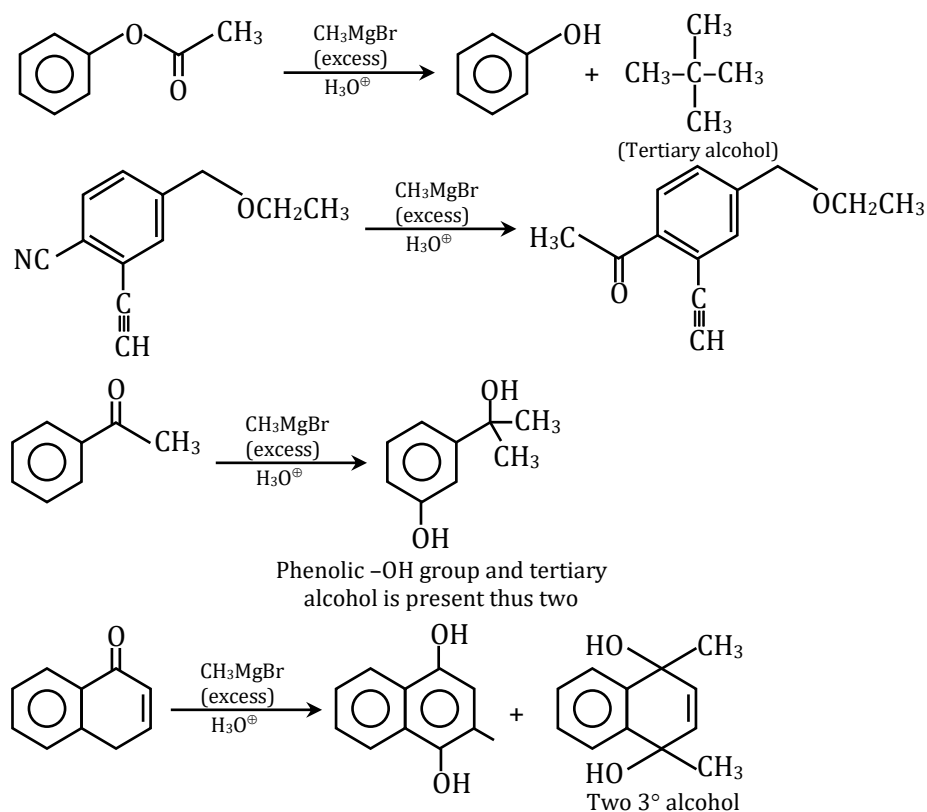
7. Ans. (4)



8. Ans. (2)

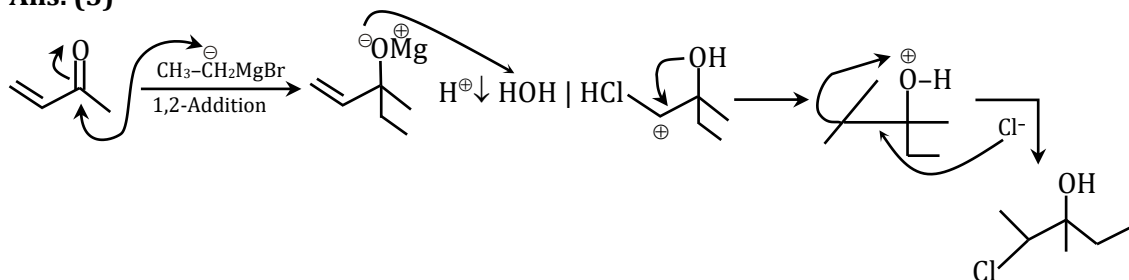


9. Ans. (1)

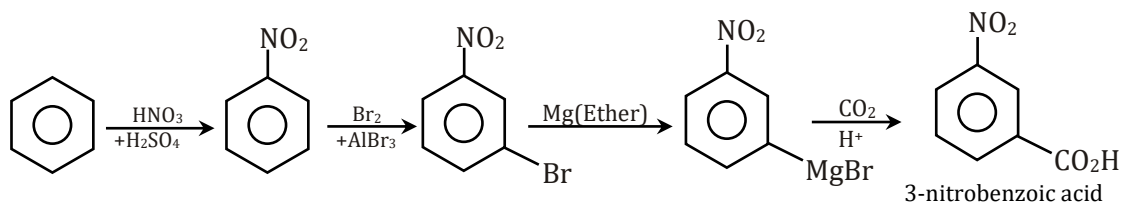


Since the given question is single correct choice, the best appropriate option is (A)

10. Ans. (3)



11. Ans. (4)

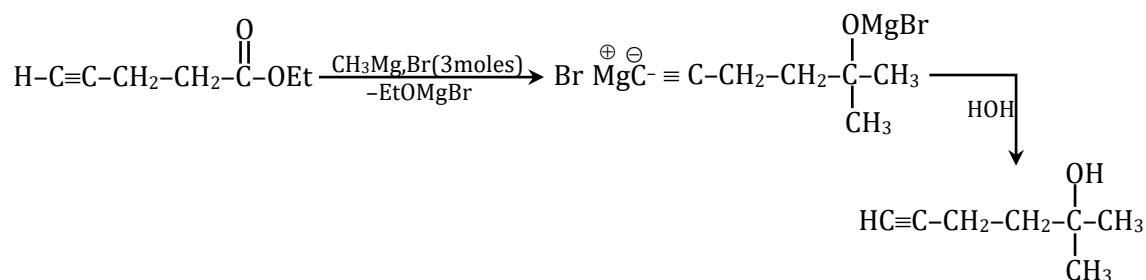


12. Ans. (3)

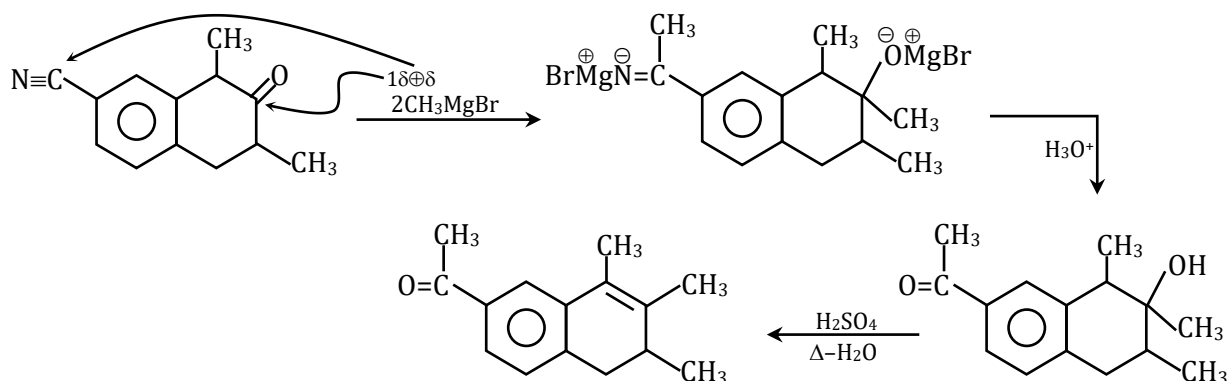
Statement 1 is true

But it consumes 3 moles of G R

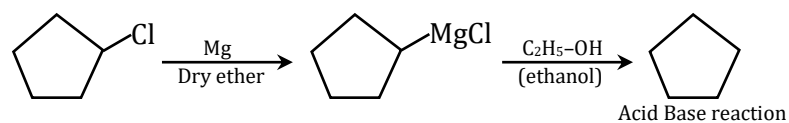
So statement 2 is false.



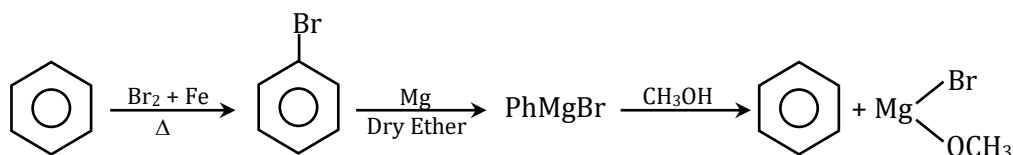
13. Ans. (1)



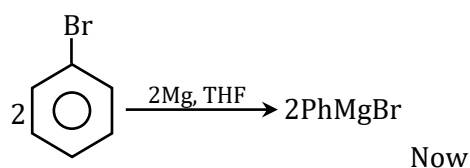
14. Ans. (1)

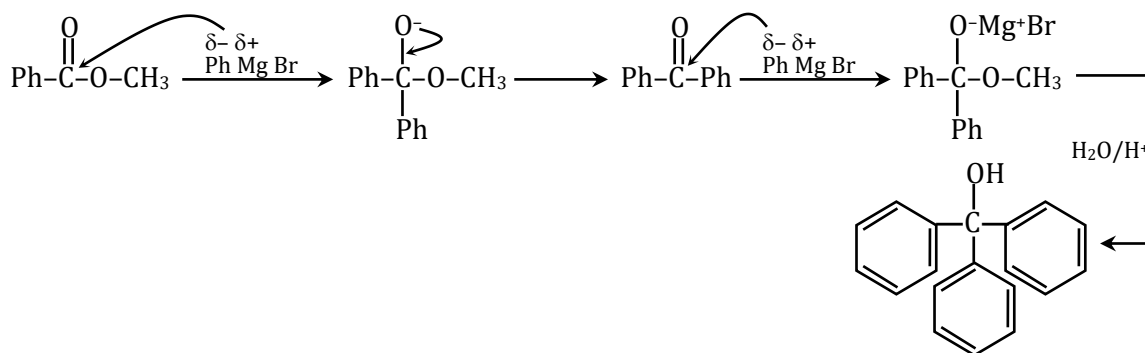


15. Ans. (2)



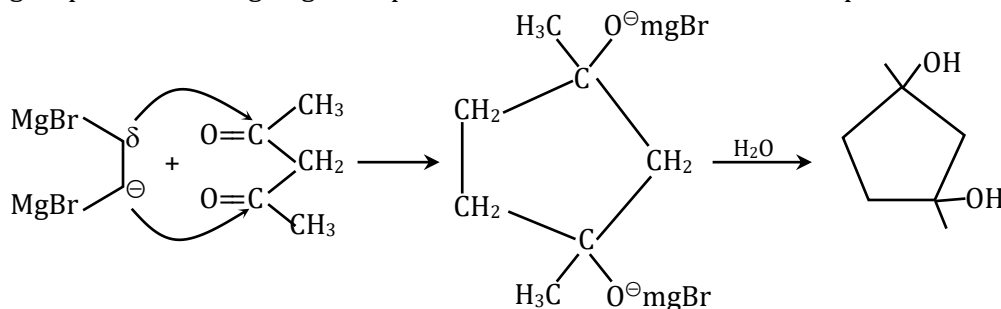
16. Ans. (2)



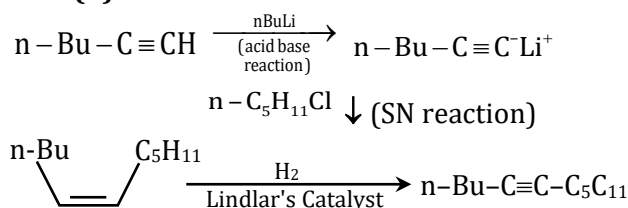


17. **Ans. (1)**

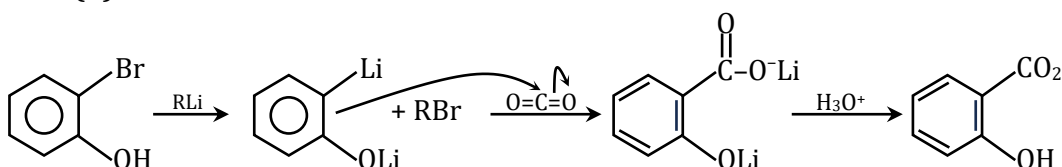
Although Acetyl Acetone predominantly gives Acid base reaction with G.R due to Active methylene group but according to given option ans should be based on nucleophilic addition reaction (NAR).



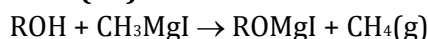
18. **Ans. (3)**



19. **Ans. (2)**



20. **Ans. (33)**



moles of CH_4 = moles of ROH

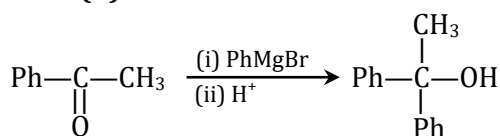
$$\Rightarrow \frac{V}{22400} = \frac{m}{\text{M.M}} \quad (\text{Assuming NTP Condition})$$

$$\Rightarrow \frac{3.1}{22400} = \frac{4.5 \times 10^{-3}}{\text{M.M}}$$

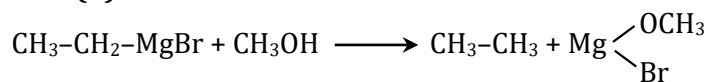
$$\Rightarrow \text{M.M} = 32.51$$

Nearest Integer = 33

21. **Ans. (4)**



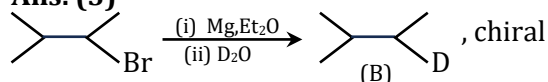
22. Ans. (3)



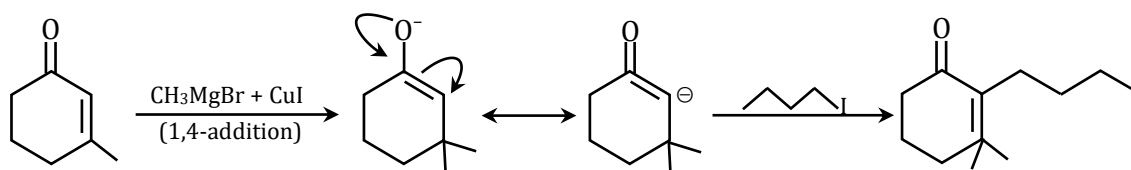
$$n = \frac{2.24 \times 10^{-3}}{22.4} = 10^{-4}$$

$$W = n \times M \\ = 10^{-4} \times 30 = 3 \text{ mg}$$

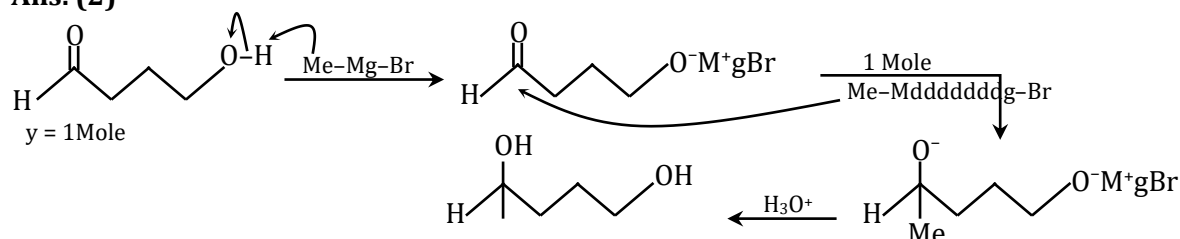
23. Ans. (3)



24. Ans. (1)



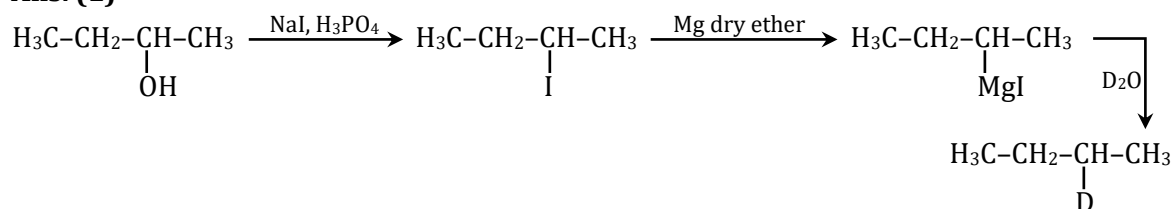
25. Ans. (2)



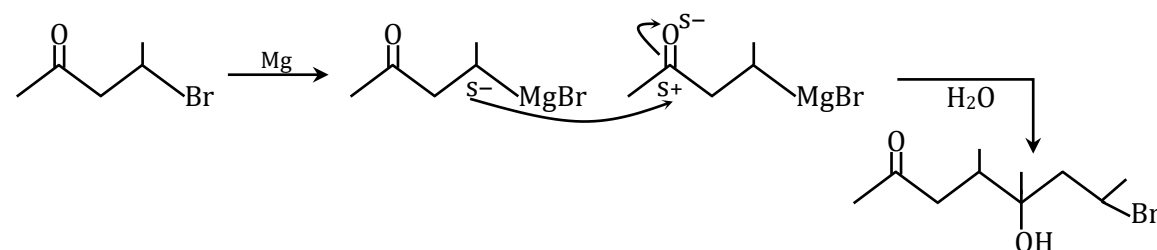
$$\therefore x = 2 \text{ mole}$$

$$\frac{x}{y} = \frac{2}{1} = 2$$

26. Ans. (1)



27. Ans. (4)

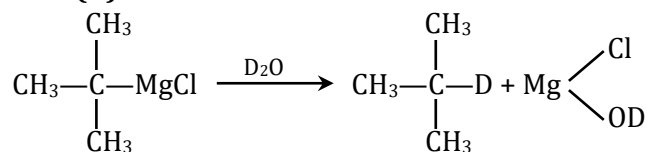


28. Ans. (1)

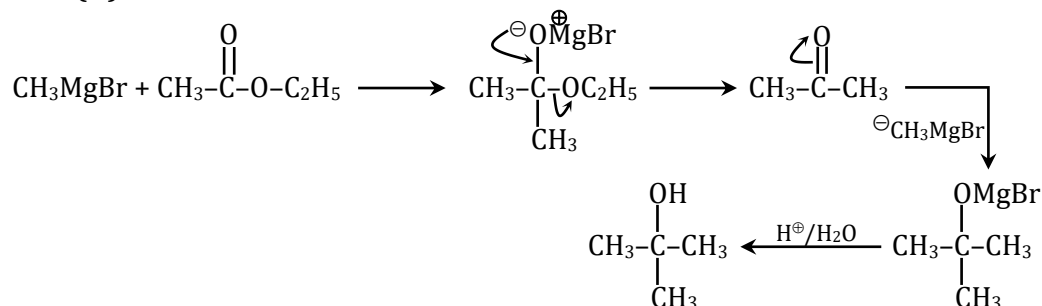


EXERCISE - JEE (Advanced) PYQ

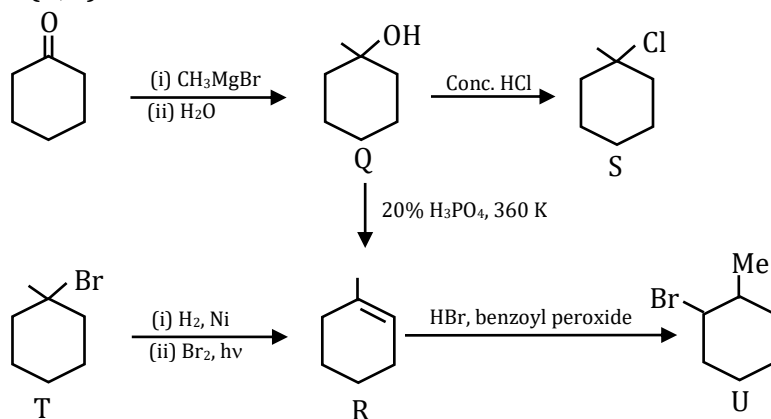
1. Ans. (A)



2. Ans. (D)



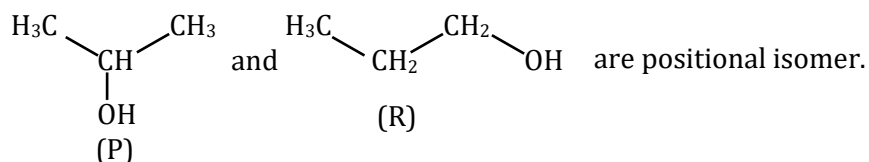
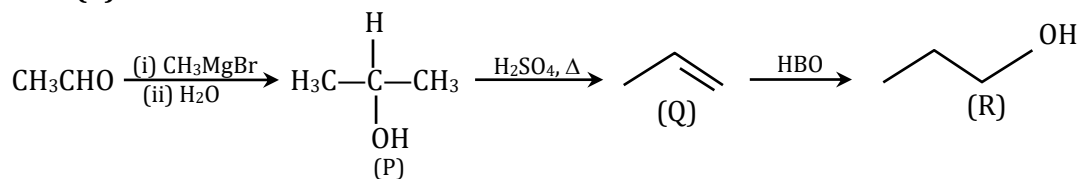
3. Ans. (B,D)



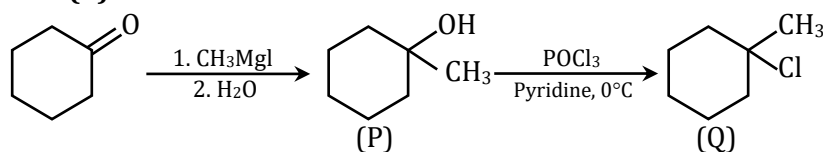
JEE (Main) Practice Paper

SECTION-A

1. Ans. (2)

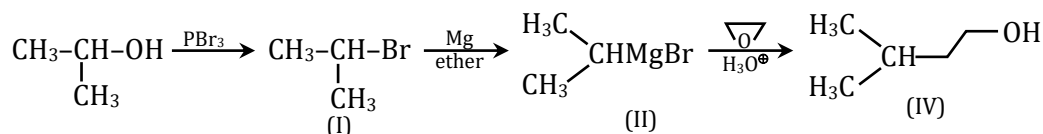
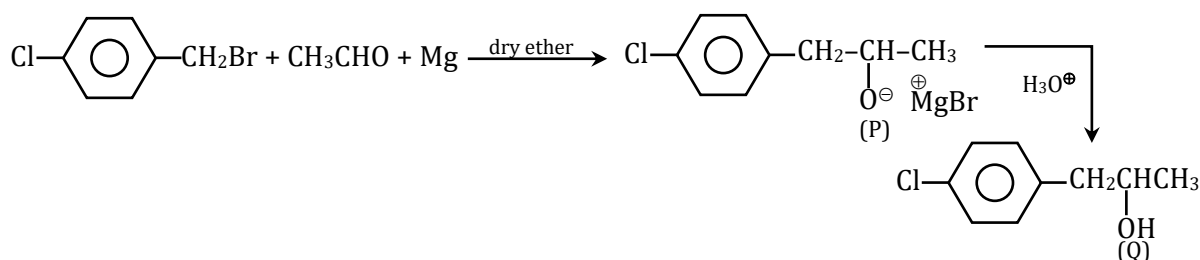


2. Ans. (1)

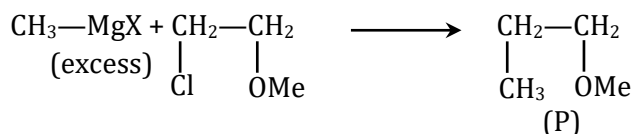


3. **Ans. (3)**

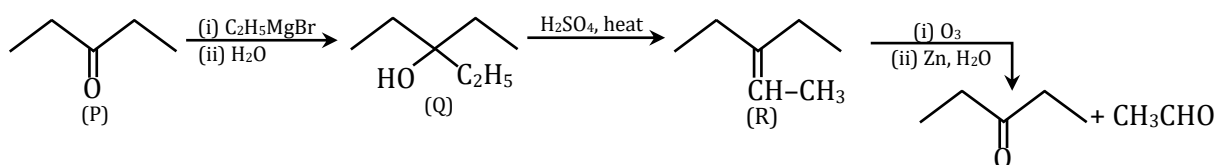
The complete reaction sequence is :

4. **Ans. (2)**5. **Ans. (4)**Here Cl is good leaving group so 4 methyl group substitute 4 Cl so $\text{Sn}(\text{CH}_3)_4$ will formed.6. **Ans. (4)**

Grignard reagent do not attack at vinylic and aryl carbon. So no reaction takes place.

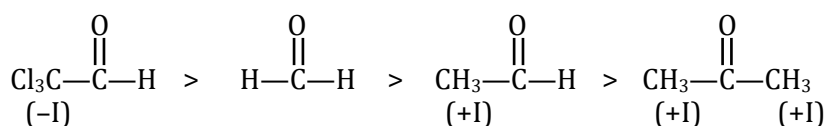
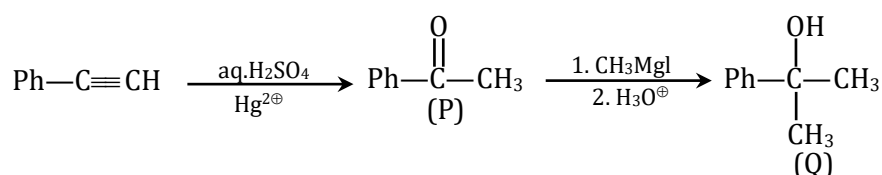
7. **Ans. (1)**8. **Ans. (2)**

The complete reaction sequence is

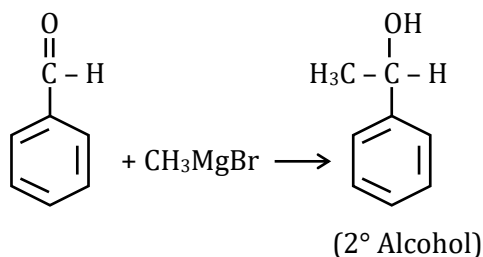
9. **Ans. (3)**

Higher the deficiency at carbonyl carbon, more will be its reacting towards nucleophilic addition.

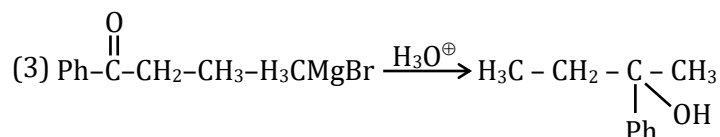
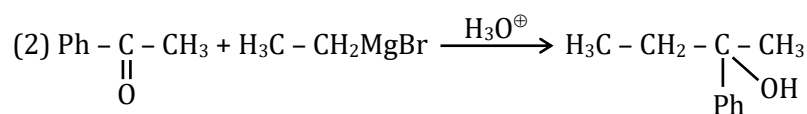
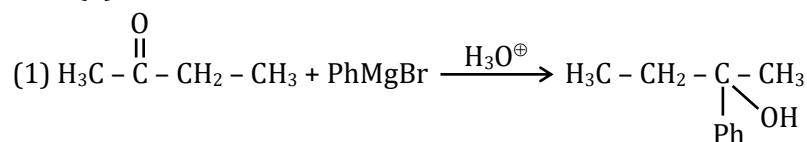
Reactivity order

10. **Ans. (3)**

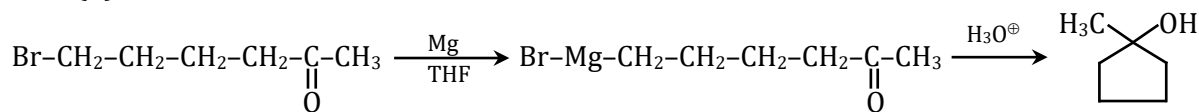
11. Ans. (1)



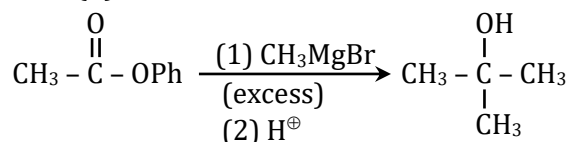
12. Ans. (4)



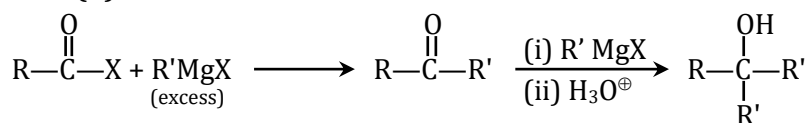
13. Ans. (2)



14. Ans. (4)



15. Ans. (1)



At least two R must be same in the product so (A) is correct.

16. Ans. (3)

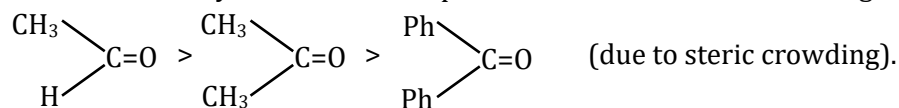
$\text{H}_2\text{C}=\text{CH}_2$ can't have an acidic hydrogen so it can't react with G.R.

17. Ans. (4)

Compound don't have acidic hydrogen, don't react with G.R. (4) is ether and don't have acidic hydrogen hence it did not react with CH_3MgBr .

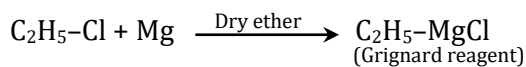
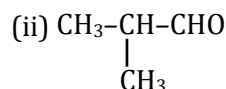
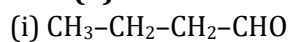
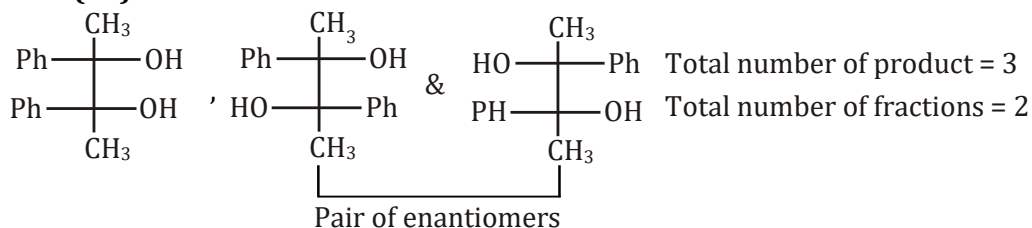
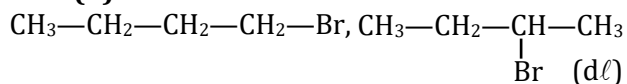
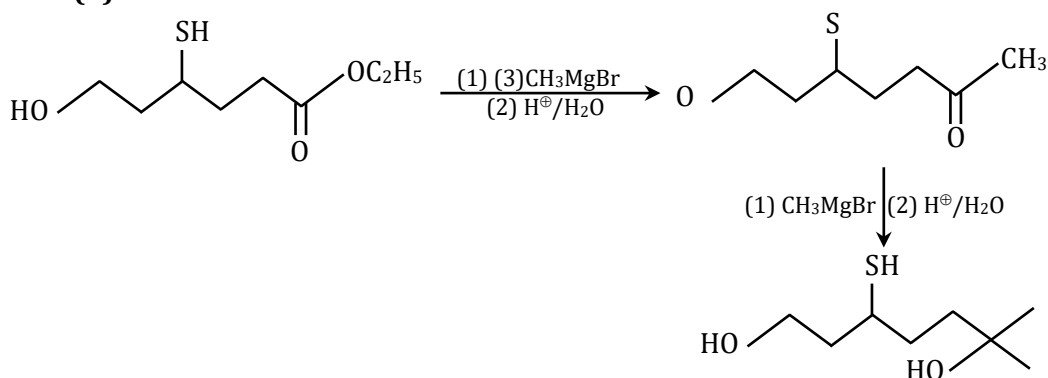
18. Ans. (4)

Correct reactivity order for nucleophilic addition reaction with PhMgBr

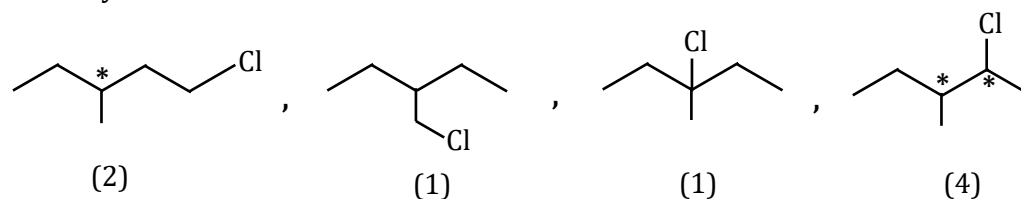


19. **Ans. (1)**

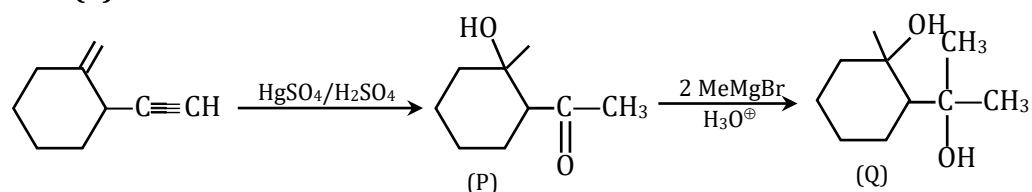
Reactivity is proportional to the electrophilicity of the carbonyl carbon.

20. **Ans. (2)****SECTION-B**1. **Ans. (2)**2. **Ans. (32)**3. **Ans. (3)**4. **Ans. (4)**4 moles of CH_3MgBr is used So, $X = 4$ 5. **Ans. (8)**

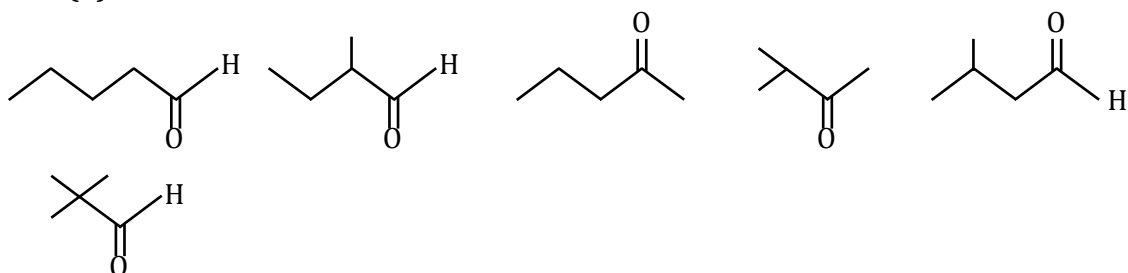
The alkyl chlorides are :



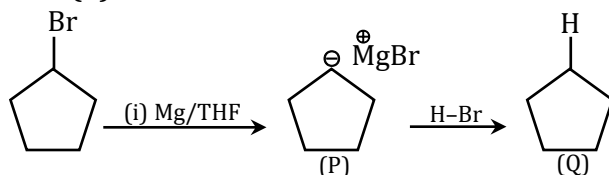
Total 8 isomeric alkyl chlorides

6. **Ans. (2)**

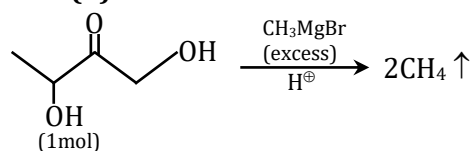
7. Ans. (6)



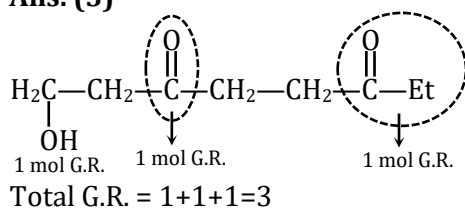
8. Ans. (5)



9. Ans. (2)

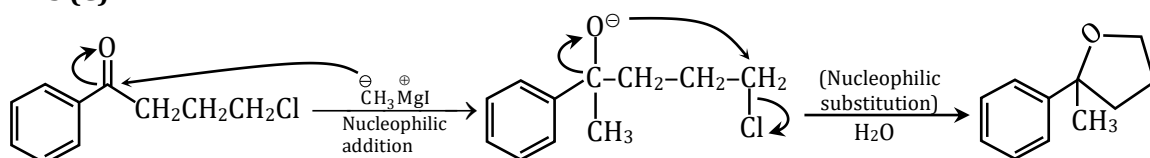


10. Ans. (3)



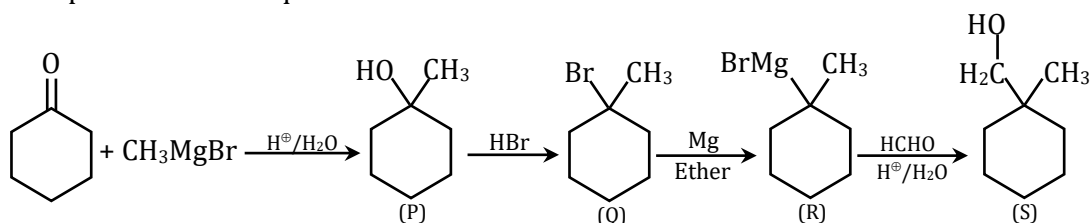
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1. Ans. (C)



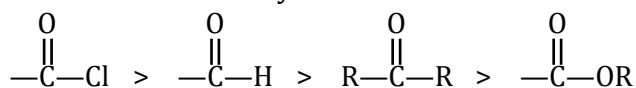
2. Ans. (B)

Complete reaction sequence is:



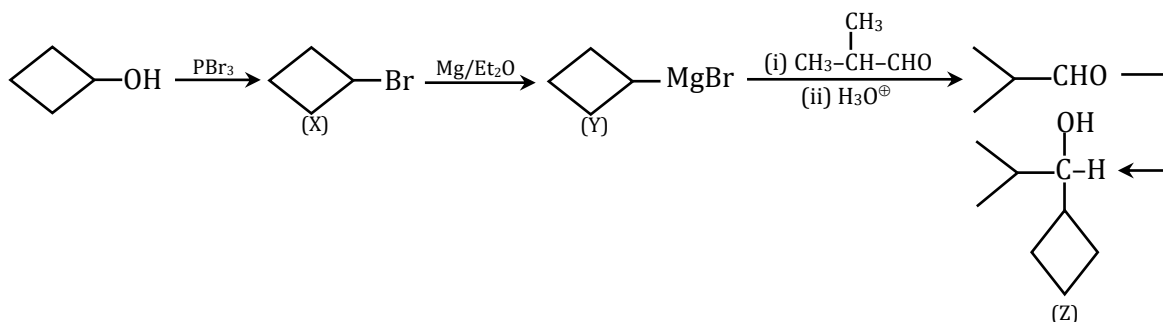
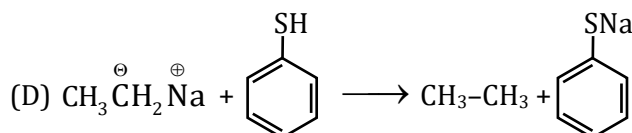
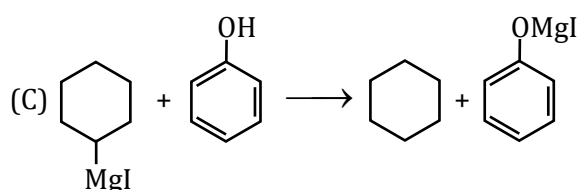
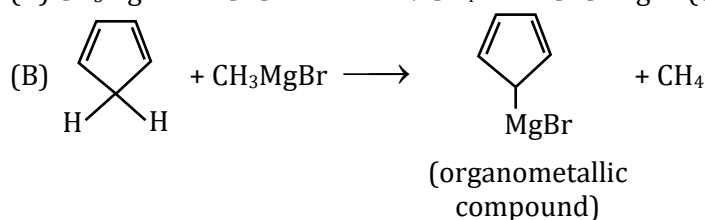
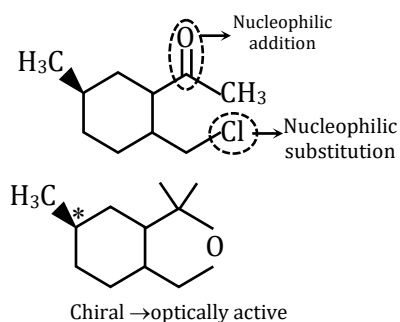
3. Ans. (A)

as electronic deficiency at carbonyl carbon increases, rate of nucleophilic attack increases.
The decreasing order of reactivity for the nucleophilic attack order will be :
Acid chloride > Aldehyde > Ketone > Ester



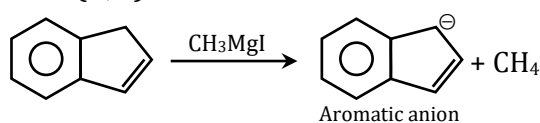
4. **Ans. (D)**

The complete reaction sequence is :

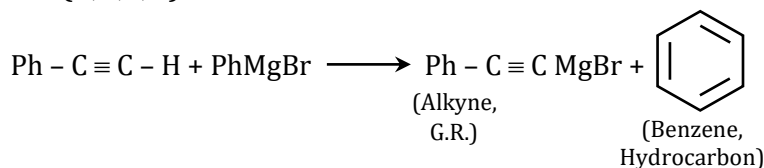
5. **Ans. (A,B)**(A) $\text{CH}_3\text{MgBr} + \text{H-C}\equiv\text{C-Ph} \xrightarrow{\text{Ether}} \text{CH}_4 + \text{Ph-C}\equiv\text{C-MgBr}$ (organometallic compound)6. **Ans. (A,B,D)**7. **Ans. (A,C,D)**

In G.R. THF solvent is used which is 5-member heterocyclic ring. Dry ether can also be used as solvent. Aryl, Allyl, Vinyl and Alkyl group can be used as organic part.

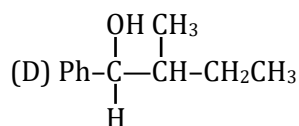
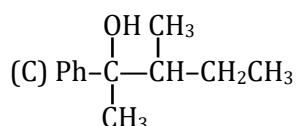
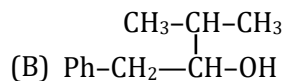
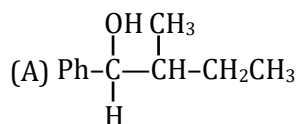
Due to high bond energy of C-F it can't be used in preparation of G.R.

8. **Ans. (B,D)**

9. Ans. (A,B,C,D)



10. Ans. (A,D)



11. Ans. (A)

(A) one CH_3MgCl reacts with phenolic $-\text{OH}$ and other two reacts with cyclic ester group to produced alcohol.

12. Ans. (A)

$\text{C}_2\text{H}_5\text{Cl} \rightarrow \text{Antiseptic}$

$\text{R}-\text{X} + \text{Mg} \xrightarrow{\text{dry ether}} \text{RMgX}$ (Grignard Reagent)

$\text{R}-\text{X} + \text{Na} \xrightarrow{\text{dry ether}} \text{Wurtz Reaction}$

$\text{C}_2\text{H}_5\text{Cl} - \text{C}_2\text{H}_5\text{ONa} \rightarrow \text{Williamson ether synthesis}$

13. Ans. (C)

Compounds	Keq
CH_3CHO	very large
$\text{p-NO}_2\text{C}_6\text{H}_4\text{CHO}$	1420
$\text{C}_6\text{H}_5\text{CHO}$	210
$\text{p-MeOC}_6\text{H}_4\text{CHO}$	32
$\text{CH}_3\text{COCH}_2\text{CH}_3$	38
$\text{C}_6\text{H}_5\text{COCH}_3$	0.8
$\text{C}_6\text{H}_5\text{COC}_6\text{H}_5$	very small

14. Ans. (B)

Compounds	Keq
CH_3CHO	very large
$\text{p-NO}_2\text{C}_6\text{H}_4\text{CHO}$	1420
$\text{C}_6\text{H}_5\text{CHO}$	210
$\text{p-MeOC}_6\text{H}_4\text{CHO}$	32
$\text{CH}_3\text{COCH}_2\text{CH}_3$	38
$\text{C}_6\text{H}_5\text{COCH}_3$	0.8
$\text{C}_6\text{H}_5\text{COC}_6\text{H}_5$	very small

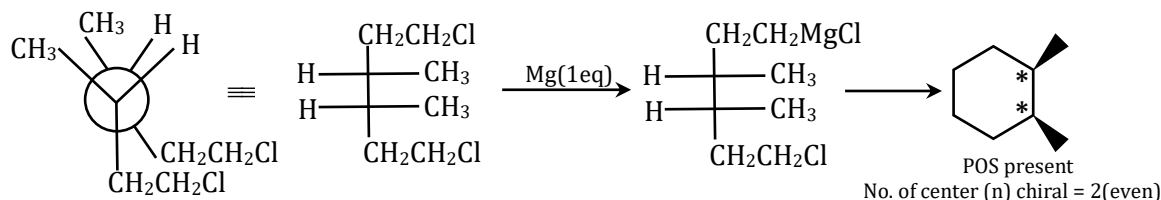
15. Ans. (A)

Cyanides give nucleophilic addition with Grignard reagents. The other compounds contain more acidic hydrogens.

16. Ans. (C)

Only benzaldehyde gives optically active products.

17. Ans. (3)



$$\text{Total no. of stereoisomer} = 2^{n-1} + 2^{n/2-1}$$

$$= 2^{2-1} + 2^{2/2-1}$$

$$= 2$$

Total no. of stereoisomer = 3

18. Ans. (5)

