ALKANES AND ALKENES

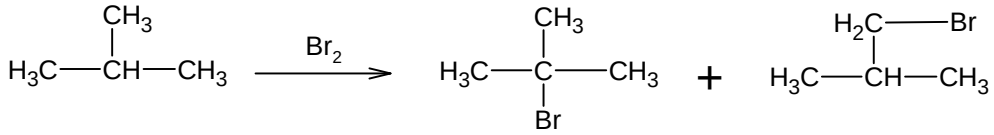
SINGLE CORRECT OPTION TYPE

1. How many monocarboxylic acid are possible, which on decarboxylation form isopentane?
(A) 2 (B) 3 (C) 5 (D) 4

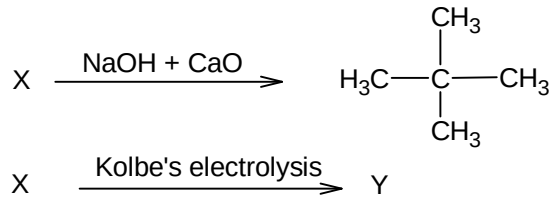
2. Ethane cannot be obtained by the following.
(A) heating methyl iodide with sodium metal in ether
(B) hydrogenation of ethane
(C) sodium acetate on Kolbe's electrolysis
(D) hydrolysis of Al_4C_3

3. Which of the following is a controlled oxidation?
(i) $CH_{4(g)} + 2O_{2(g)} \rightarrow 2CO_{2(g)} + 2H_2O_{(l)}$ (ii) $CH_{4(g)} + O_{2(g)} \rightarrow C_{(s)} + 2H_2O_{(l)}$
(iii) $CH_{4(g)} + O_{2(g)} \xrightarrow{Mo_2O_3} HCHO + H_2O_{(l)}$ (iv) $2CH_{4(g)} + O_{2(g)} \xrightarrow{Cu/300^\circ C} 2CH_3OH_{(l)}$
(A) only iv (B) both i & ii (C) ii, iii & iv (D) both ii & iii

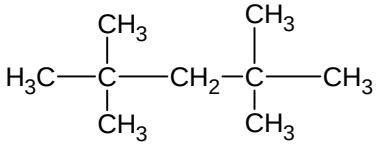
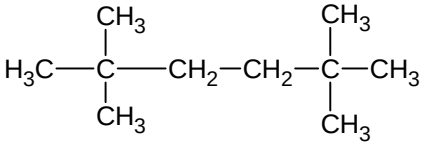
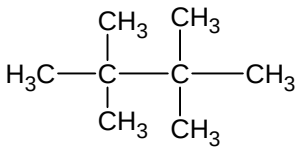
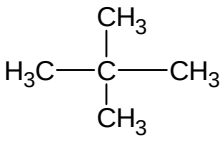
4. Which of the following steps has zero activation energy?
(A) $CH_4 + \dot{Cl} \rightarrow \dot{C}H_3 + HCl$ (B) $Cl - Cl \xrightarrow{hv} 2\dot{Cl}$
(C) $\dot{C}H_3 + \dot{C}H_3 \rightarrow H_3C - CH_3$ (D) $\dot{C}H_3 + Cl - Cl \rightarrow CH_3Cl + \dot{Cl}$

5. 
(A) (B)

The percentage yield of 'A' is?
Note:[The relative reactivities of $1^\circ, 2^\circ, 3^\circ$ Hs $\Rightarrow 1 : 3.8 : 5$]
(A) 36% (B) 64% (C) 72% (D) 28%

6. 

Then 'Y' is

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

7. Which of the following is not obtained when propyl chloride and methyl chloride react with sodium in dry ether?
(A) C_2H_6 (B) C_4H_{10} (C) C_3H_8 (D) C_6H_{14}

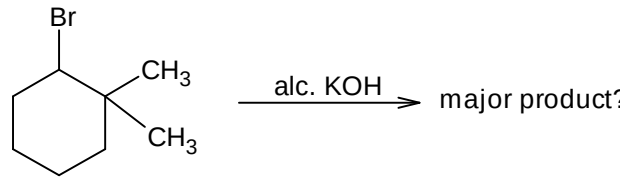
8. The volume of methane (at NTP) formed when 0.41 g sodium acetate treated with sodalime.
(A) 2.24 mL (B) 22.4 mL (C) 11.2 mL (D) 112 mL

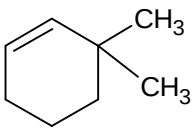
9. The ratio of products, 1-chloropropane to 2-chloropropane respectively formed in the chlorination of propane if all hydrogens are abstracted at equal rates is
(A) 1:1 (B) 2:3 (C) 2:1 (D) 3:1

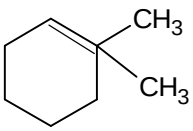
10. 2.84 g of methyl iodide was completely converted into methyl magnesium iodide and was decomposed by excess of ethanol. The volume of gaseous hydrocarbon produced at NTP will be
(A) 22.4 L (B) 224 mL (C) 0.448 L (D) 2.24 L

11. $C_2H_5Cl \xrightarrow{\text{alcoholic KOH}} A \xrightarrow{\text{aqua.KOH}} B$. A, B are
(A) C_2H_5OH, C_2H_4 (B) C_2H_4, C_2H_5OH (C) C_3H_8, C_2H_5OH (D) C_2H_2, C_2H_5OH

12. The number of chiral centres generated during monochlorination of $CH_3-\underset{\displaystyle CH_3}{\overset{|}{CH}}-CH_2-CH_3$ is
(A) 1 (B) 2 (C) 3 (D) 4

13. 


(A)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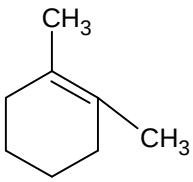
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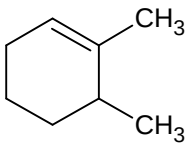
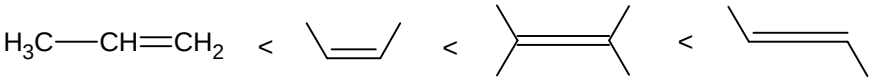
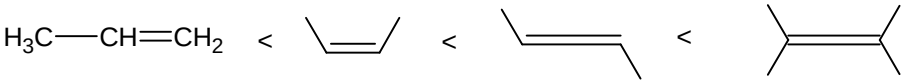
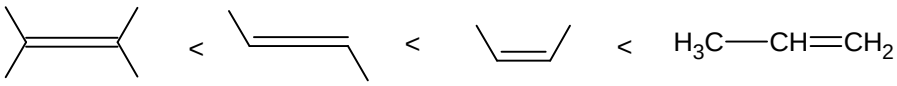
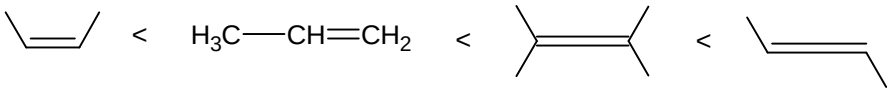

(D)

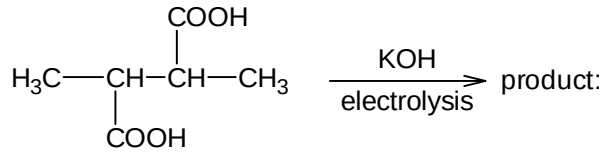
14. Which of the following is correct order of stability of alkenes?

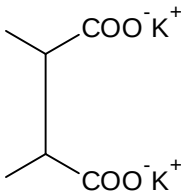
(A) 

(B) 

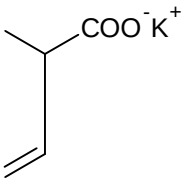
(C) 

(D) 

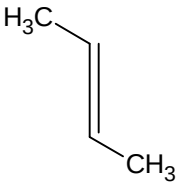
15. 



(A)



(B)



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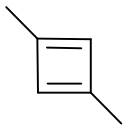
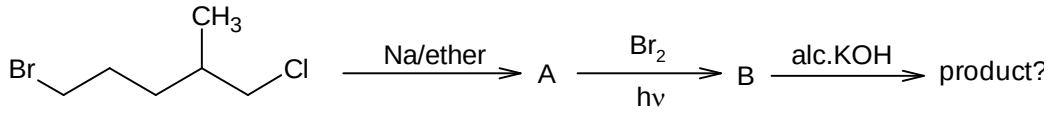
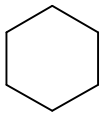
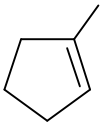
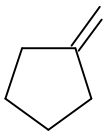

(D)

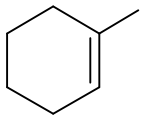
16. The major product of the following reaction is



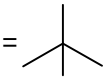
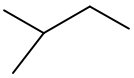
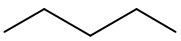

(A)


(B)

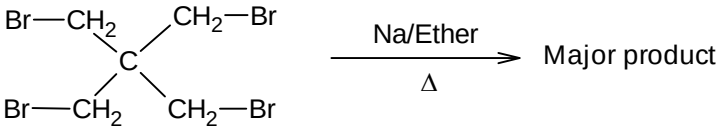

(C)

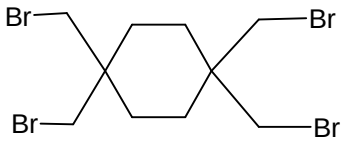

(D)

17. Arrange the following alkanes in decreasing order of their heat of combustion.

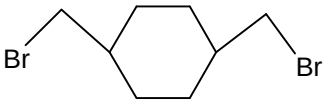
x =  y =  z = 

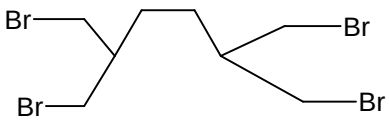
(A) $x > y > z$ (B) $z > x > y$ (C) $z > y > x$ (D) $x > z > y$

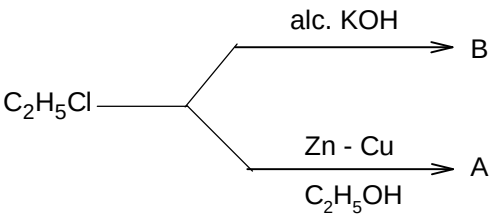
18. 

(A) 

(B) 

(C) 

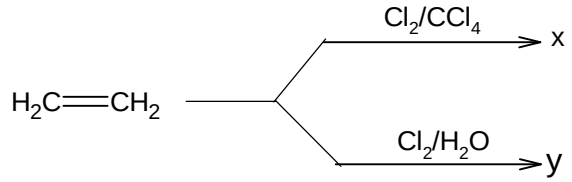
(D) 

19. 

Here A and B are

(A) C_2H_4 , C_2H_6 (B) C_2H_6 , C_2H_4 (C) C_2H_4 , C_2H_5OH (D) C_2H_2 , C_2H_5OH

20.



Here x and y are

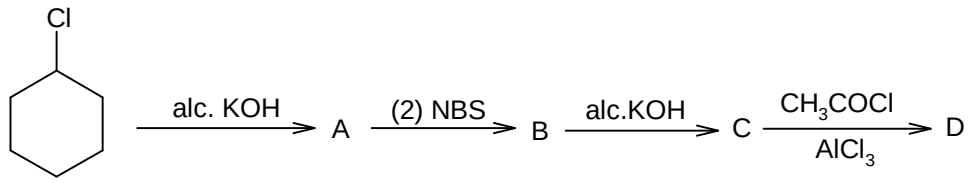
(A) $ClCH_2-CH_2Cl$, $Cl-CH_2-CH_2-Cl$ (B) $ClCH_2-CH_2Cl$, $Cl-CH_2-CH_2-OH$

(C) $Cl_2C=CCl_2$, $ClCH=CHCl$ (D) $Cl_2C=CCl_2$, $ClCH-CH_2OH$

INTEGER TYPE

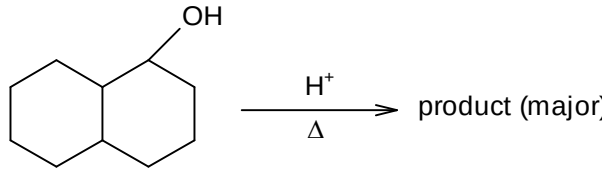
21. The number of structural isomers with molecular formula 'C_4H_8'.

22.



The number of non-bonding e^-s in 'D' _____.

23. The number of $\alpha-H$ S present in the major product of the reaction,



24. $C_6H_{14} \xrightarrow[600°C,\ 35\,atm]{Cr_2O_3/Al_2O_3} x$. Number of π electrons in 'x', is?

25. The number of structural isomers for C_7H_{16} _____.

KEY

1.	D	**2.**	D	**3.**	C	**4.**	C	**5.**	A
6.	B	**7.**	C	**8.**	D	**9.**	D	**10.**	C
11.	A	**12.**	B	**13.**	A	**14.**	B	**15.**	C
16.	B	**17.**	C	**18.**	B	**19.**	B	**20.**	B
21.	5	**22.**	4	**23.**	8	**24.**	6	**25.**	9

❇ *Wish You all the Best* ❇