

CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA NEET SET 27

Chemistry

1. What is the maximum number of orbitals that can be identified with the following quantum numbers ?

$$n = 3, l = 1, m_l = 0.$$

A. 1

B. 3

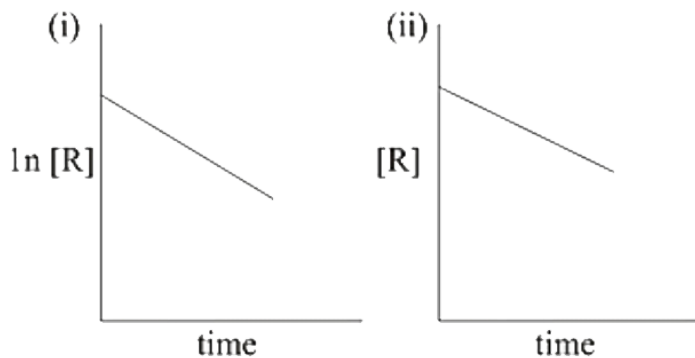
C. 4

D. 2

Answer: A

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2. The given plots represent the variation of the concentration of a reactant R with time for two different reaction (i) and (ii) The respective orders of the reactions are



A. 1, 0

B. 1, 1

C. 0, 1

D. 0, 2

Answer: A



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3. Equal masses of H_2 , O_2 and methane have been taken in a container of volume V at temperature $27^\circ C$ in identical conditions. The ratio of the volume of gases $H_2 : O_2 :$ methane would be

A. 16 : 8 : 2

B. 18: 1: 2

C. 16: 1: 2

D. 8: 16: 1

Answer: C

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4. Which of the following compounds is likely to show both Frenkel and Schottky defects in its crystalline form ?

A. KBr

B. AgBr

C. ZnS

D. CsCl

Answer: B



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5. Which property of colloids is not dependent on the change on colloidal particles?

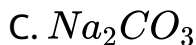
- A. Electro-osmosis
- B. Coagulation
- C. Electrophoresis
- D. Tyndall effect

Answer: D



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6. Which of the following salts will give highest pH in water ?

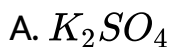


Answer: C



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7. Among the following 0.10 m aqueous solutions, which one will exhibit the largest freezing point depression?



B. KCl

C. $Al_2(SO_4)_3$

D. $C_6H_{12}O_6$

Answer: C



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8. When 22.4L of $H_2(g)$ is mixed with 11.2 of $Cl_2(g)$, each at STP, the moles of $HCl(g)$ formed is equal to

A. 1 mol of $HCl(g)$

B. 0.5 mol of $HCl(g)$

C. 2 mol of $HCl(g)$

D. 1.5 mol of $HCl(g)$

Answer: A



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9. When 0.1molMnO_4^{2-} is oxidized the quantity of electricity required to completely oxidize MnO_4^{2-} to MnO_4^- is

A. 96.50 C

B. 96500 C

C. 9650 C

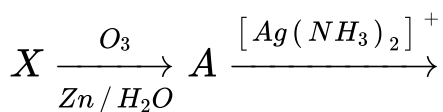
D. $2 \times 96500\text{C}$

Answer: C

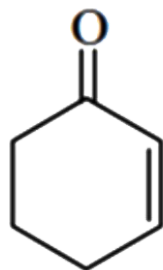
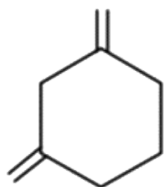


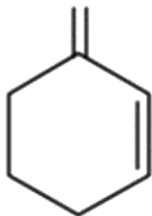
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10. An unsaturated hydrocarbon X absorbs two hydrogen molecules on catalytic hydrogenation, and also give following reaction:

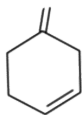


B - oxo -hexanedioic acid) X will be :





C.



D.

Answer: D



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11. The weight of silver (at wt. = 108) displaced by a quantity of electricity which displaces 560 mL of O_2 at STP will be (Volume of 1 mole of gas STP is 22.4 L)

A. 54.9 g

B. 5.4 g

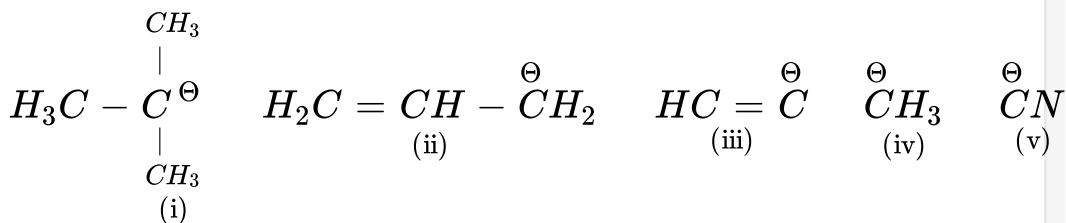
C. 10.8 g

D. 108.0g

Answer: C

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12. The increasing order of basicity for the following intermediates is (from weak to strong)



A. (v) lt (iii) lt (ii) lt (iv) lt(i)

B. (iii) lt (iv) lt (ii) lt (i) lt (v)

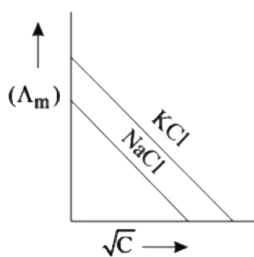
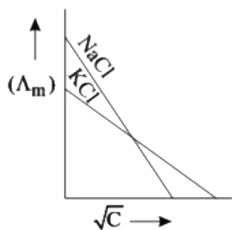
C. (v) lt (i) lt (iv) lt (ii) lt (iii)

D. (iii) It (i) It (ii) It (iv) It (v)

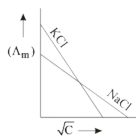
Answer: A

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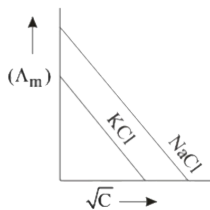
13. Which one of the following graphs between molar conductivity (Λ_m) versus \sqrt{C} is correct?



C.



D.



Answer: B

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14. For a given exothermic reaction, K_p and k'_p are the equilibrium constants at temperatures T_1 and T_2 respectively. Assuming that heat of reaction is constant in temperature range between T_1 and T_2 , it is readily observed that

A. $K_p = \frac{1}{K'_p}$

B. $K_p < K'_p$

C. $K_p = K'_p$

D. $K_p > K'_p$

Answer: D



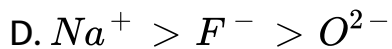
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15. Which of the following orders of ionic radii is correctly represented?

A. $H^- > H > H^+$

B. $Al^{3+} > Mg^{2+} > N^{3-}$

C. $F^- > O^{2-} > Na^+$



Answer: A



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16. 1.0 g of magnesium is burnt with 0.56 g O_2 in a closed vessel. Which reactant is left in excess and how much?

A. O_2 , 0.28g

B. O_2 , 0.16g

C. Mg , 0.16g

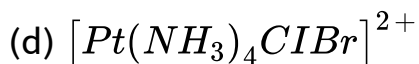
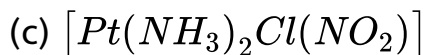
D. Mg , 0.44g

Answer: C



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17. Among (a) - (d) the complexes that can display geometrical isomerism are :



A. (a) and (b)

B. (c) and (d)

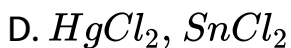
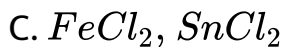
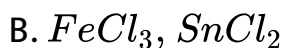
C. (b) and (c)

D. (d) and (a)

Answer: B



18. The pair of compounds that can exist together is:



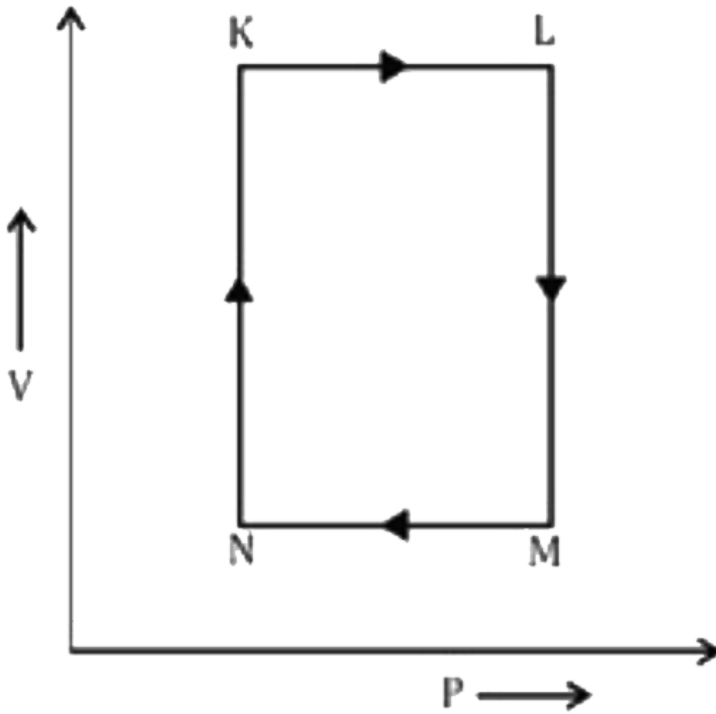
Answer: C



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19. A fixed mass m of a gas is subjected to transformation of states from K to L to M to N and back to K as shown in the

figure.



The succeeding operation that enable this transformation of state are

- A. Heating, cooling, heating, cooling
- B. Cooling, heating, cooling, heating
- C. Heating, cooling, cooling, heating

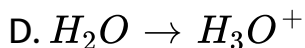
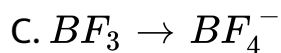
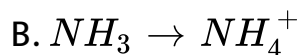
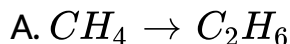
D. Cooling, heating, heating, cooling

Answer: C



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20. Which one of the following conversions involve change in both hybridisation and shape?



Answer: B



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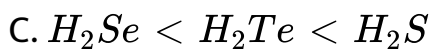
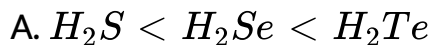
21. which of the following hydrogen bond is strongest in vapour phase ?



Answer: D

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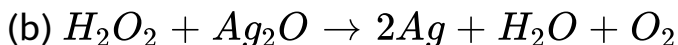
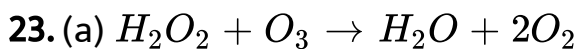
22. Acidity of diprotic acids in aqueous solutions increases in the order



Answer: A



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Role of hydrogen peroxide in the above reactions is respectively

- A. Reducing in (a) and oxidizing in (b)
- B. Oxidizing in (a) and reducing in (b)
- C. Reducing in (a) and (b)
- D. Oxidizing in (a) and (b)

Answer: C

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24. Artificial sweetner which is stable under cold conditions only is :

- A. Alitame

B. Saccharine

C. Aspartame

D. Sucralose

Answer: C

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25. In acidic medium, H_2O_2 changes $Cr_2O_7^{-2}$ to CrO_5 which has two ($-O-O-$) bonds. Oxidation state of Cr in CrO_5 is

A. +3

B. +5

C. +6

D. - 10

Answer: C

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26. The reaction of aqueous $KMnO_4$ with H_2O_2 in acidic conditions gives :

A. Mn^{4+} and MnO_2

B. Mn^{2+} and O_2

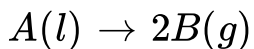
C. Mn^{4+} and O_2

D. Mn^{2+} and O_3

Answer: B

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27. For the reaction.



$$\Delta U = 2.1 \text{ k Cal}, \quad \Delta S = 20 \text{ Cal K}^{-1} \text{ at } 300\text{K}$$

Hence ΔG in kcal is ?

A. 2.7

B. -2.7

C. 5.4

D. 1.35

Answer: B



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28. Two solutions, A and B, each of 100 L was made by dissolving 4g of NaOH and 9.8 g of H₂SO₄ in water, respectively. The pH of the resultant solution obtained from mixing 40 L of solution A and 10 L of solution B is_____.

A. 5.3

B. 10.6

C. 9.4

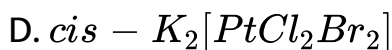
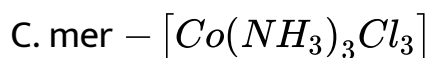
D. 7.5

Answer: B



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29. Which of the following complex is used in cancer treatment?



Answer: B



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30. The standard heat of formation ($\Delta_f H_{298}^\circ$) of ethane (in kJ/mol), if the heat of combustion of ethane, hydrogen and

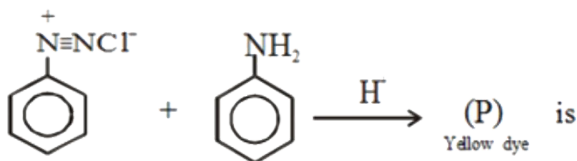
graphite are -1560 , -393.5 and -286 kJ/mol, respectively is

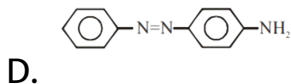
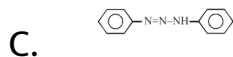
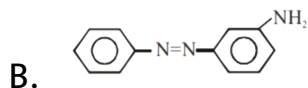
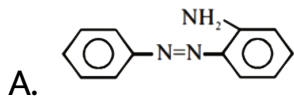
- A. 192.5
- B. -192.5
- C. 96.25
- D. $+96.25$

Answer: A

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31. In the following reaction, the product (P)

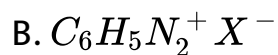
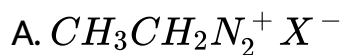
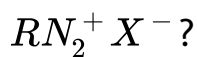


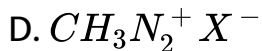


Answer: D

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32. Which of the following will be most stable diazonium salt

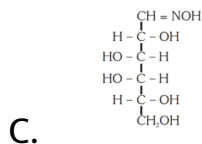
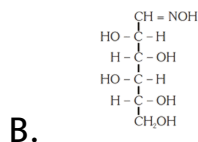
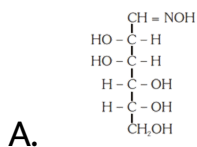


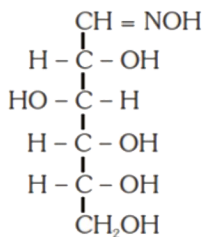


Answer: B

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33. $D(+)$ glucose reacts with hydroxylamine and yields an oxime. The structure of the oxime would be :



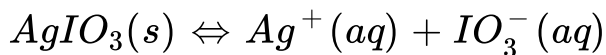


D.

Answer: D

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34. In a saturated solution of the sparingly soluble strong electrolyte AgIO_3 (molecular mass = 283) the equilibrium which sets in is



If the solubility product constant K_{SP} of AgIO_3 at a given temperature is 1.0×10^{-8} , what is the mass of AgIO_3 contained in 100mL of its saturated solution?

A. $1.0 \times 10^{-4} g$

B. $28.3 \times 10^{-2} g$

C. $1.0 \times 10^{-7} g$

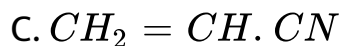
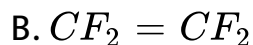
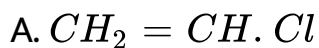
D. $2.83 \times 10^{-3} g$

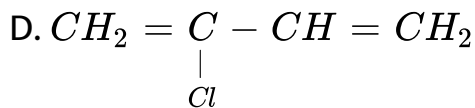
Answer: D



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35. State the monomer of Teflon.

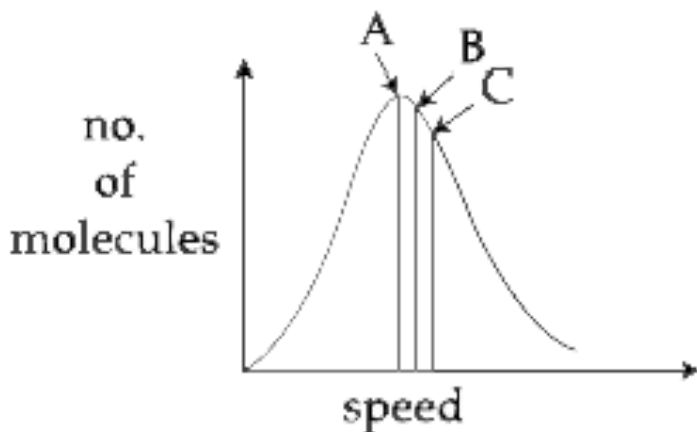




Answer: B

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36. Identify the correct labels of A, B and C in the following graph from the options given below:



Root mean square speed (V_{rms} , most probable speed (V_{mp} ,

Average speed (V_{av})

A. $A - V_{\text{rms}}, B - V_{\text{mp}}, C - V_{\text{av}}$

B. $A - V_{\text{mp}}, B - V_{\text{av}}, C - V_{\text{rms}}$

C. $A - V_{\text{mp}}, B - V_{\text{rms}}, C - V_{\text{av}}$

D. $A - V_{\text{av}}, B - V_{\text{rms}}, C - V_{\text{mp}}$

Answer: B



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37. In a protein molecule various amino acids are linked together by :

A. α - glycosidic bond

B. β - glycosidic bond

C. Peptide bond

D. Dative bond

Answer: C



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38. In the Kjeldahl's method for estimation of nitrogen present in a soil sample, ammonia evolved from 0.75 g of sample neutralized 10 mL of 1 M H_2SO_4 . The percentage of nitrogen in the soil is

A. 37.33

B. 43.33

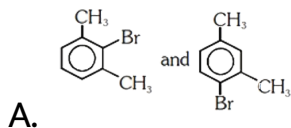
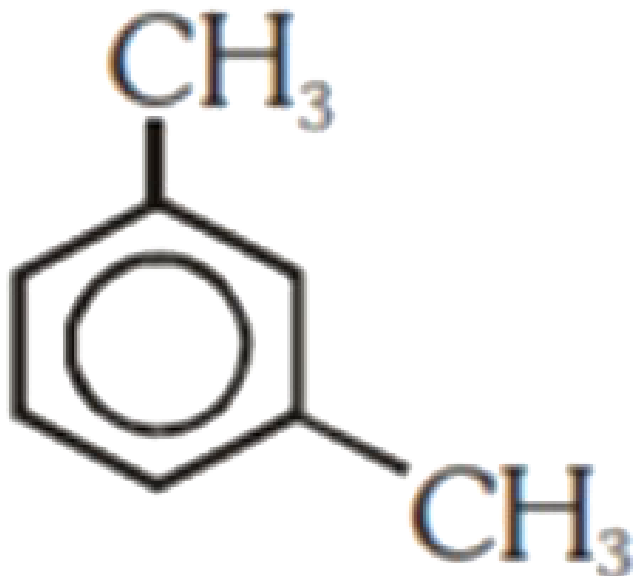
C. 45.33

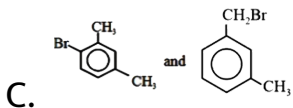
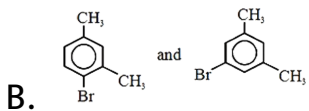
D. 35.33

Answer: A

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39. What products are formed when the following compounds is treated with Br_2 in the presence of $FeBr_3$?



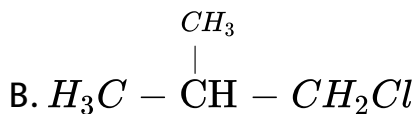
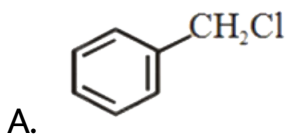


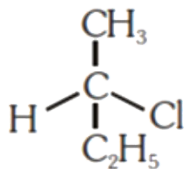
D. All of these

Answer: A

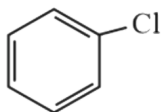
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40. Which of the following compounds will undergo racemisation when solution of alcoholic KOH ?





C.

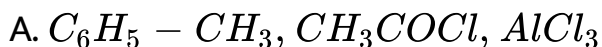


D.

Answer: C

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41. Among the following sets of reactants which one produces anisole?



D. C_6H_5OH , neutral $FeCl_3$

Answer: B



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42. Which of the following will not be soluble in sodium hydrogen carbonate?

A. Benzenesulphonic acid

B. Benzoic acid

C. o-Nitrophenol

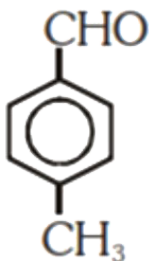
D. 2, 4, 6- trinitrophenol

Answer: C

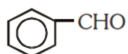


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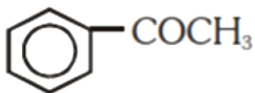
43. Which one is most reactive towards nucleophilic addition reaction?



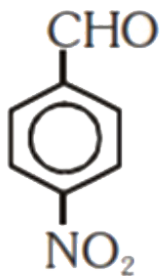
A.



B.



C.

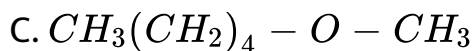
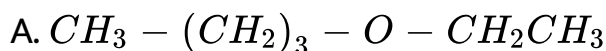
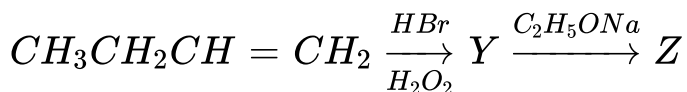


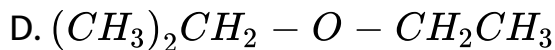
D.

Answer: D

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44. Identify Z in the sequence of reactions :





Answer: A



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45. Which of the following organic compounds has same hybridization as its combustion product (CO_2)?

A. Ethanol

B. Ethyne

C. Ethene

D. Ethane

Answer: B



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