

PYQSide

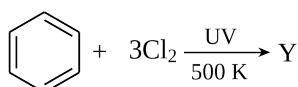
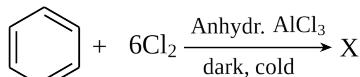
NEET HYDROCARBONS — PYQS

Max. Marks: 232

Questions: 58

Section A (MCQ)

- Q.1** The number of chlorine atoms present in the organic products X and Y of the following reactions, respectively are : [NEET (UG) 2026]



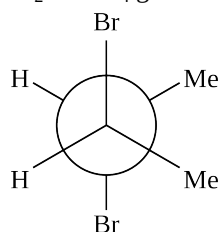
- (1) 3 and 3 (2) 6 and 6 (3) 6 and 3 (4) 3 and 6

Scan or tap for the full solution

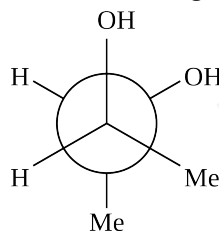


- Q.2** Given below are two statements :

Statement-I: trans-But-2-ene upon treatment with Br_2 in CCl_4 gives the following product.



Statement-II: cis-But-2-ene upon treatment with alkaline KMnO_4 gives the following product.



In the light of the above statements, choose the most appropriate answer from the options given below.

[RE-NEET (UG) 2026]

- (1) Statement-I is incorrect but Statement-II is correct
 (2) Both Statement-I and Statement-II are correct
 (3) Both Statement-I and Statement-II are incorrect
 (4) Statement-I is correct but Statement-II is incorrect

Scan or tap for the full solution



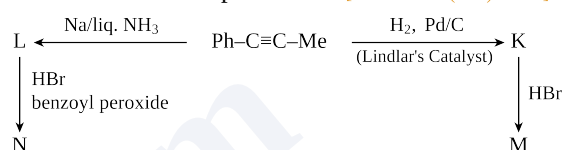
- Q.3** Among the following, the compound having conjugated double bonds is [RE-NEET (UG) 2026]

- (1) hepta-1,6-diene (2) hepta-1,3-diene
 (3) hepta-1,4-diene (4) hepta-1,5-diene

Scan or tap for the full solution



- Q.4** Consider the following reaction sequences and choose the correct option. [RE-NEET (UG) 2026]



- (1) M and N are stereoisomers
 (2) K and L are geometrical isomers
 (3) K and L are enantiomers
 (4) M and N are geometrical isomers

Scan or tap for the full solution



- Q.5** Which one of the following reactions does NOT give benzene as the product? [NEET (UG) 2025]

- (1) $\text{H-C}\equiv\text{C-H} \xrightarrow[\text{at } 873\text{ K}]{\text{red hot Iron Tube}}$
 (2) $\text{C}_6\text{H}_5\text{-N}\equiv\text{N}^+\text{Cl}^- \xrightarrow[\text{warm}]{\text{H}_2\text{O}}$
 (3) $\text{C}_6\text{H}_5\text{-COONa} \xrightarrow[\Delta]{\text{sodalime}}$
 (4) $\text{n-hexane} \xrightarrow[773\text{ K, 10-20 atm}]{\text{Mo}_2\text{O}_3}$

Scan or tap for the full solution



- Q.6** Which one of the following compounds does not decolourize bromine water? [NEET (UG) 2025]

- (1) $\text{C}_6\text{H}_5\text{-CH=CH}_2$ (2) $\text{C}_6\text{H}_5\text{-NH}_2$
 (3) C_6H_{10} (4) $\text{C}_6\text{H}_5\text{-OH}$

Scan or tap for the full solution



- Q.7** Given below are two statements:

Statement-I: The boiling point of three isomeric pentanes follows the order

n-pentane > isopentane > neopentane

Statement-II: When branching increases, the molecule attains a shape of sphere. This results in smaller surface area for contact, due to which the intermolecular forces between the spherical molecules are weak, thereby lowering the boiling point.

In the light of the above statements, choose the most appropriate answer from the options given below:

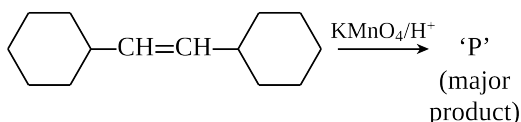
[NEET (UG) 2024]

- (1) Both Statement-I and Statement-II are correct
- (2) Both Statement-I and Statement-II are incorrect
- (3) Statement-I is correct but Statement-II is incorrect
- (4) Statement-I is incorrect but Statement-II is correct

Scan or tap for the full solution



Q.8 For the given reaction:



'P' is

[NEET (UG) 2024]

- (1)
- (2)
- (3)
- (4)

Scan or tap for the full solution



Q.9 Baeyer's reagent is :

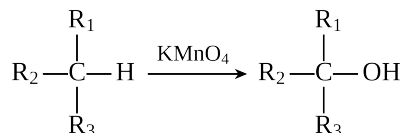
[RE-NEET (UG) 2024]

- (1) Acidic potassium permanganate solution
- (2) Acidic potassium dichromate solution
- (3) Cold, dilute, aqueous solution of potassium permanganate
- (4) Hot, concentrated solution of potassium permanganate

Scan or tap for the full solution



Q.10 The alkane that can be oxidized to the corresponding alcohol by KMnO_4 as per the equation



is, when :

[RE-NEET (UG) 2024]

- (1) $\text{R}_1 = \text{H}$; $\text{R}_2 = \text{H}$; $\text{R}_3 = \text{H}$
- (2) $\text{R}_1 = \text{CH}_3$; $\text{R}_2 = \text{CH}_3$; $\text{R}_3 = \text{CH}_3$
- (3) $\text{R}_1 = \text{CH}_3$; $\text{R}_2 = \text{H}$; $\text{R}_3 = \text{H}$
- (4) $\text{R}_1 = \text{CH}_3$; $\text{R}_2 = \text{CH}_3$; $\text{R}_3 = \text{H}$

Scan or tap for the full solution



Q.11 Weight (g) of two moles of the organic compound, which is obtained by heating sodium ethanoate with sodium hydroxide in presence of calcium oxide is :

[NEET (UG) 2023]

- (1) 32
- (2) 30
- (3) 18
- (4) 16

Scan or tap for the full solution



Q.12 Compound X on reaction with O_3 followed by $\text{Zn}/\text{H}_2\text{O}$ gives formaldehyde and 2-methyl propanal as products. The compound X is

[NEET (UG) 2022]

- (1) 3-Methylbut-1-ene
- (2) 2-Methylbut-1-ene
- (3) 2-Methylbut-2-ene
- (4) Pent-2-ene

Scan or tap for the full solution



Q.13 The decreasing order of boiling points of the following alkanes is :

- A. heptane
- B. butane
- C. 2-methylbutane
- D. 2-methylpropane
- E. hexane

Choose the correct answer from the options given below :

[NEET (UG) 2022 (Phase 2)]

- (1) $\text{A} > \text{E} > \text{C} > \text{B} > \text{D}$
- (2) $\text{A} > \text{C} > \text{E} > \text{D} > \text{B}$
- (3) $\text{C} > \text{D} > \text{A} > \text{E} > \text{B}$
- (4) $\text{A} > \text{E} > \text{B} > \text{C} > \text{D}$

Scan or tap for the full solution



Q.14 The incorrect method for the synthesis of alkenes is

[NEET (UG) 2022 (Phase 2)]

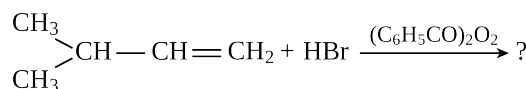
- (1) Treating vicinal dihalides with Zn metal
- (2) Treating of alkynes with Na in liquid NH_3
- (3) Heating alkyl halides with alcoholic KOH
- (4) Treating alkyl halides in aqueous KOH solution

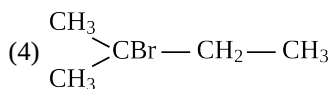
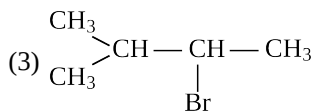
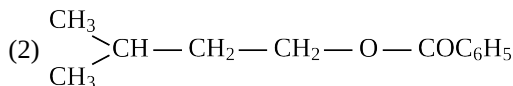
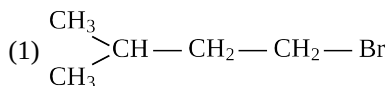
Scan or tap for the full solution



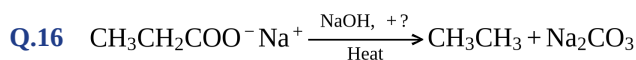
Q.15 The major product of the following chemical reaction is :

[NEET (UG) 2021]





Scan or tap for the full solution



Consider the above reaction and identify the missing reagent/chemical. [NEET (UG) 2021]

- (1) DIBAL-H (2) B_2H_6
(3) Red Phosphorus (4) CaO

Scan or tap for the full solution



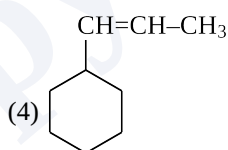
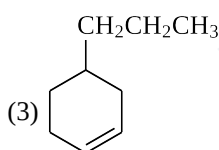
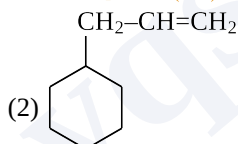
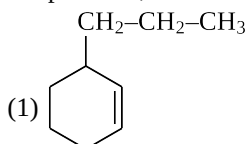
Q.17 Which of the following alkane cannot be made in good yield by Wurtz reaction? [NEET (UG) 2020]

- (1) 2, 3-Dimethylbutane (2) n-Heptane
(3) n-Butane (4) n-Hexane

Scan or tap for the full solution



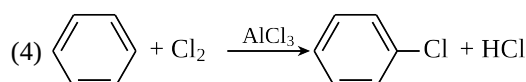
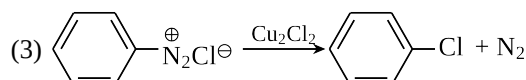
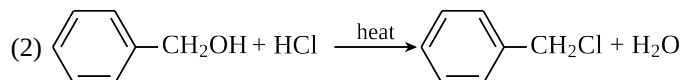
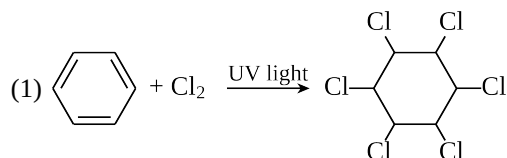
Q.18 An alkene on ozonolysis gives methanal as one of the products, Its structure is : [NEET (UG) 2020]



Scan or tap for the full solution



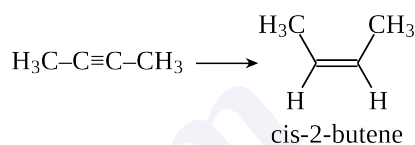
Q.19 Among the following, the reaction that proceeds through an electrophilic substitution, is : [NEET (UG) 2019]



Scan or tap for the full solution



Q.20 The most suitable reagent for the following conversion, is : [NEET (UG) 2019]

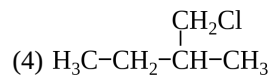
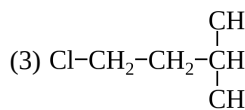
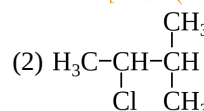
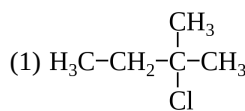


- (1) Zn / HCl (2) $\text{Hg}^{2+}/\text{H}^+, \text{H}_2\text{O}$
(3) Na / liquid NH_3 (4) $\text{H}_2, \text{Pd/C}, \text{quinoline}$

Scan or tap for the full solution



Q.21 An alkene "A" on reaction with O_3 and $\text{Zn} + \text{H}_2\text{O}$ gives propanone and ethanal in equimolar ratio. Addition of HCl to alkene "A" gives "B" as the major product. The structure of product "B" is : [NEET (UG) 2019]



Scan or tap for the full solution



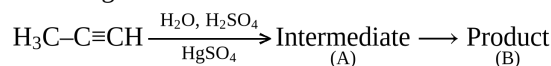
Q.22 Hydrocarbon (A) reacts with bromine by substitution to form an alkyl bromide which by Wurtz reaction is converted to gaseous hydrocarbon containing less than four carbon atoms. (A) is [NEET 2018]

- (1) $\text{CH} \equiv \text{CH}$ (2) $\text{CH}_2 = \text{CH}_2$
(3) $\text{CH}_3 - \text{CH}_3$ (4) CH_4

Scan or tap for the full solution



Q.23 Predict the correct intermediate and product in the following reaction :



[NEET 2017]

- (1) A : $\text{H}_3\text{C}-\underset{\text{OH}}{\text{C}}=\text{CH}_2$ B : $\text{H}_3\text{C}-\underset{\text{SO}_4}{\text{C}}=\text{CH}_2$
 (2) A : $\text{H}_3\text{C}-\underset{\text{O}}{\text{C}}-\text{CH}_3$ B : $\text{H}_3\text{C}-\text{C}\equiv\text{CH}$
 (3) A : $\text{H}_3\text{C}-\underset{\text{OH}}{\text{C}}=\text{CH}_2$ B : $\text{H}_3\text{C}-\underset{\text{O}}{\text{C}}-\text{CH}_3$
 (4) A : $\text{H}_3\text{C}-\underset{\text{SO}_4}{\text{C}}=\text{CH}_2$ B : $\text{H}_3\text{C}-\underset{\text{O}}{\text{C}}-\text{CH}_3$

Scan or tap for the full solution



Q.24 Consider the nitration of benzene using mixed conc. H_2SO_4 and HNO_3 . If a large amount of KHSO_4 is added to the mixture, the rate of nitration will be

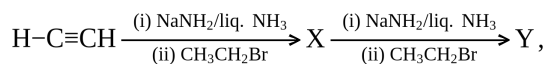
[NEET 2016 (Phase 1)]

- (1) unchanged (2) doubled
 (3) faster (4) slower

Scan or tap for the full solution



Q.25 In the reaction



X and Y are

[NEET 2016 (Phase 1)]

- (1) X = 2-Butyne, Y = 2-Hexyne
 (2) X = 1-Butyne, Y = 2-Hexyne
 (3) X = 1-Butyne, Y = 3-Hexyne
 (4) X = 2-Butyne, Y = 3-Hexyne

Scan or tap for the full solution



Q.26 Which of the following can be used as halide component for Friedel-Crafts reaction?

[NEET 2016 (Phase 2)]

- (1) Chlorobenzene (2) Bromobenzene
 (3) Chloroethene (4) Isopropyl chloride

Scan or tap for the full solution



Q.27 Which of the following compounds shall not produce propene by reaction with HBr followed by elimination or direct only elimination reaction?

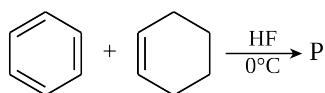
[NEET 2016 (Phase 2)]

- (1) $\begin{array}{c} \text{H}_2\text{C} \quad \text{CH}_2 \\ \diagdown \quad \diagup \\ \text{C} \\ \diagup \quad \diagdown \\ \text{H}_2 \end{array}$ (2) $\text{H}_3\text{C}-\underset{\text{H}_2}{\text{C}}-\text{CH}_2\text{OH}$
 (3) $\text{H}_2\text{C}=\text{C}=\text{O}$ (4) $\text{H}_3\text{C}-\underset{\text{H}_2}{\text{C}}-\text{CH}_2\text{Br}$

Scan or tap for the full solution

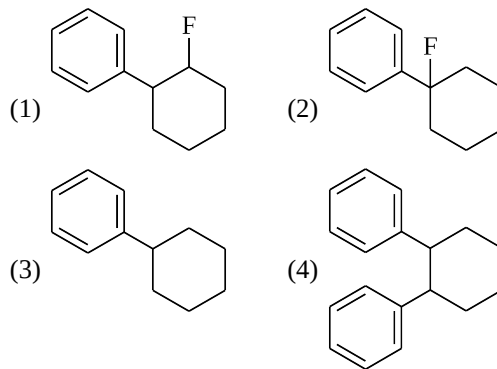


Q.28 In the given reaction,



the product P is

[NEET 2016 (Phase 2)]



Scan or tap for the full solution



Q.29 The compound that will react most readily with gaseous bromine has the formula

[NEET 2016 (Phase 2)]

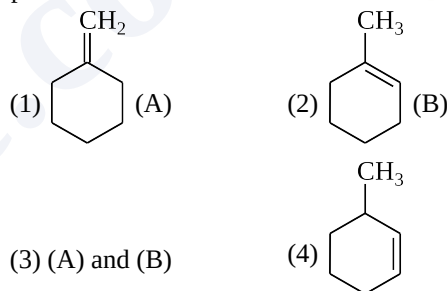
- (1) C_3H_6 (2) C_2H_2 (3) C_4H_{10} (4) C_2H_4

Scan or tap for the full solution



Q.30 In the reaction with HCl , an alkene reacts in accordance with the Markovnikov's rule to give a product 1-chloro-1-methylcyclohexane. The possible alkene is

[AIPMT 2015]



Scan or tap for the full solution



Q.31 2,3-Dimethyl-2-butene can be prepared by heating which of the following compounds with a strong acid?

[AIPMT 2015]

- (1) $(\text{CH}_3)_3\text{CCH}=\text{CH}_2$
 (2) $(\text{CH}_3)_2\text{C}=\text{CHCH}_2\text{CH}_3$
 (3) $(\text{CH}_3)_2\text{CHCH}_2\text{CH}=\text{CH}_2$
 (4) $(\text{CH}_3)_2\text{CH}-\underset{\text{CH}_3}{\text{CH}}-\text{CH}=\text{CH}_2$

Scan or tap for the full solution



Q.32 The oxidation of benzene by V_2O_5 in the presence of air produces

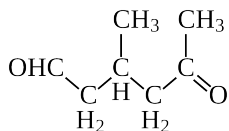
[AIPMT 2015]

- (1) maleic anhydride (2) benzoic acid
 (3) benzaldehyde (4) benzoic anhydride.

Scan or tap for the full solution

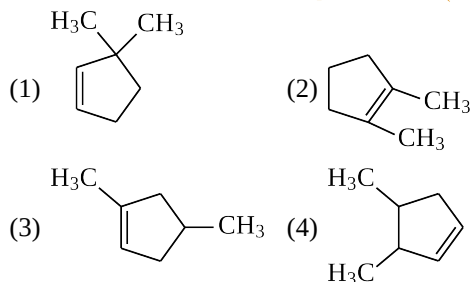


Q.33 A single compound of the structure,



is obtainable from ozonolysis of which of the following cyclic compounds?

[AIPMT 2015 (Cancelled)]

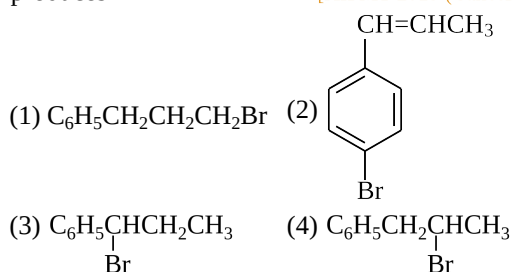


Scan or tap for the full solution



Q.34 The reaction of $\text{C}_6\text{H}_5\text{CH}=\text{CHCH}_3$ with HBr produces

[AIPMT 2015 (Cancelled)]

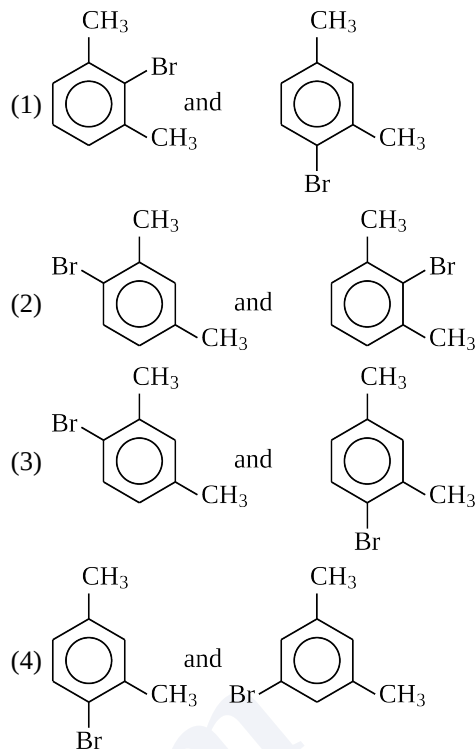
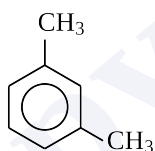


Scan or tap for the full solution



Q.35 What products are formed when the following compound is treated with Br_2 in the presence of FeBr_3 ?

[AIPMT 2014]



Scan or tap for the full solution



Q.36 Some meta-directing substituents in aromatic substitution are given. Which one is most deactivating?

[NEET 2013]

- (1) $-\text{COOH}$ (2) $-\text{NO}_2$ (3) $-\text{C}\equiv\text{N}$ (4) $-\text{SO}_3\text{H}$

Scan or tap for the full solution



Q.37 Which of the following compounds will not undergo Friedel-Crafts reaction easily?

[NEET 2013]

- (1) Nitrobenzene (2) Toluene
(3) Cumene (4) Xylene

Scan or tap for the full solution



Q.38 Nitrobenzene on reaction with conc. $\text{HNO}_3/\text{H}_2\text{SO}_4$ at $80-100^\circ\text{C}$ forms which one of the following products?

[NEET 2013]

- (1) 1, 4-Dinitrobenzene
(2) 1, 2, 4 - Trinitrobenzene
(3) 1, 2-Dinitrobenzene
(4) 1, 3-Dinitrobenzene

Scan or tap for the full solution



Q.39 Which of the following reagents will be able to distinguish between 1-butyne and 2-butyne?

[AIPMT 2012 (Mains)]

- (1) NaNH_2 (2) HCl (3) O_2 (4) Br_2

Scan or tap for the full solution



Q.40 Among the following compounds the one that is most reactive towards electrophilic nitration is

[AIPMT 2012 (Prelims)]

- (1) benzoic acid (2) nitrobenzene
(3) toluene (4) benzene

Scan or tap for the full solution



Q.41 Liquid hydrocarbons can be converted to a mixture of gaseous hydrocarbons by [AIPMT 2010 (Prelims)]

- (1) oxidation
(2) cracking
(3) distillation under reduced pressure
(4) hydrolysis

Scan or tap for the full solution



Q.42 Benzene reacts with CH_3Cl in the presence of anhydrous AlCl_3 to form [AIPMT 2009]

- (1) chlorobenzene (2) benzyl chloride
(3) xylene (4) toluene.

Scan or tap for the full solution



Q.43 Nitrobenzene can be prepared from benzene by using a mixture of conc. HNO_3 and conc. H_2SO_4 . In the mixture, nitric acid acts as a/an [AIPMT 2009]

- (1) acid (2) base
(3) catalyst (4) reducing agent

Scan or tap for the full solution



Q.44 $\text{H}_3\text{C}-\underset{\text{CH}_3}{\text{CH}}-\text{CH}=\text{CH}_2 + \text{HBr} \rightarrow$

A (predominantly) is [AIPMT 2008]

- (1) $\text{CH}_3-\underset{\text{Br}}{\text{CH}}-\underset{\text{CH}_3}{\text{CH}}-\text{CH}_3$
(2) $\text{CH}_3-\underset{\text{CH}_3}{\text{CH}}-\underset{\text{Br}}{\text{CH}}-\text{CH}_3$
(3) $\text{CH}_3-\underset{\text{CH}_3}{\text{CH}}-\text{CH}_2-\text{CH}_2\text{Br}$
(4) $\text{CH}_3-\underset{\text{Br}}{\text{C}}-\text{CH}_2\text{CH}_3$

Scan or tap for the full solution



Q.45 The order of decreasing reactivity towards an electrophilic reagent, for the following would be [AIPMT 2007]

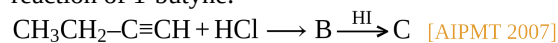
- (i) benzene (ii) toluene
(iii) chlorobenzene (iv) phenol

- (1) (ii) > (iv) > (i) > (iii) (2) (iv) > (iii) > (ii) > (i)
(3) (iv) > (ii) > (i) > (iii) (4) (i) > (ii) > (iii) > (iv)

Scan or tap for the full solution



Q.46 Predict the product C obtained in the following reaction of 1-butyne.



- (1) $\text{CH}_3-\text{CH}_2-\text{CH}_2-\underset{\text{Cl}}{\underset{\text{I}}{\text{C}}}-\text{H}$
(2) $\text{CH}_3-\text{CH}_2-\underset{\text{I}}{\text{CH}}-\text{CH}_2\text{Cl}$
(3) $\text{CH}_3\text{CH}_2-\underset{\text{Cl}}{\underset{\text{I}}{\text{C}}}-\text{CH}_3$
(4) $\text{CH}_3-\underset{\text{Cl}}{\text{CH}}-\text{CH}_2\text{CH}_2\text{I}$

Scan or tap for the full solution



Q.47 Which of the compound with molecular formula C_5H_{10} yields acetone on ozonolysis? [AIPMT 2007]

- (1) 3-Methyl-1-butene (2) Cyclopentane
(3) 2-Methyl-1-butene (4) 2-Methyl-2-butene

Scan or tap for the full solution



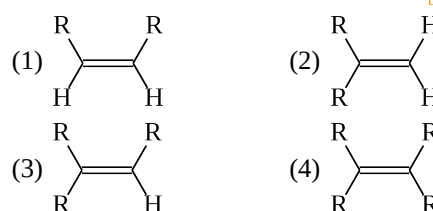
Q.48 The correct order regarding the electronegativity of hybrid orbitals of carbon is [AIPMT 2006]

- (1) $\text{sp} < \text{sp}^2 < \text{sp}^3$ (2) $\text{sp} > \text{sp}^2 < \text{sp}^3$
(3) $\text{sp} > \text{sp}^2 > \text{sp}^3$ (4) $\text{sp} < \text{sp}^2 > \text{sp}^3$

Scan or tap for the full solution



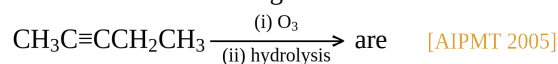
Q.49 Which one of the following alkenes will react faster with H_2 under catalytic hydrogenation conditions? [AIPMT 2005]



Scan or tap for the full solution



Q.50 Products of the following reaction :



- (1) $\text{CH}_3\text{COOH} + \text{CO}_2$
(2) $\text{CH}_3\text{COOH} + \text{HOOC}\cdot\text{CH}_2\text{CH}_3$
(3) $\text{CH}_3\text{CHO} + \text{CH}_3\text{CH}_2\text{CHO}$
(4) $\text{CH}_3\text{COOH} + \text{CH}_3\text{COCH}_3$

Scan or tap for the full solution



Q.51 Using anhydrous AlCl_3 as catalyst, which one of the following reactions produces ethylbenzene (PhEt)?

[AIPMT 2004]

- (1) $\text{H}_3\text{C}-\text{CH}_2\text{OH} + \text{C}_6\text{H}_6$ (2) $\text{CH}_3-\text{CH}=\text{CH}_2 + \text{C}_6\text{H}_6$
 (3) $\text{H}_2\text{C}=\text{CH}_2 + \text{C}_6\text{H}_6$ (4) $\text{H}_3\text{C}-\text{CH}_3 + \text{C}_6\text{H}_6$

Scan or tap for the full solution



Q.52 Reaction of HBr with propene in the presence of peroxide gives

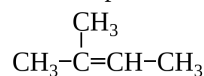
[AIPMT 2004]

- (1) isopropyl bromide (2) 3-bromopropane
 (3) allyl bromide (4) n-propyl bromide

Scan or tap for the full solution



Q.53 The compound



on reaction with NaIO_4 in the presence of KMnO_4 gives

[AIPMT 2003]

- (1) CH_3COCH_3
 (2) $\text{CH}_3\text{COCH}_3 + \text{CH}_3\text{COOH}$
 (3) $\text{CH}_3\text{COCH}_3 + \text{CH}_3\text{CHO}$
 (4) $\text{CH}_3\text{CHO} + \text{CO}_2$

Scan or tap for the full solution



Q.54 The correct order of reactivity towards the electrophilic substitution of the compounds aniline (I), benzene (II) and nitrobenzene (III) is

[AIPMT 2003]

- (1) $\text{III} > \text{II} > \text{I}$ (2) $\text{II} > \text{III} > \text{I}$
 (3) $\text{I} < \text{II} > \text{III}$ (4) $\text{I} > \text{II} > \text{III}$

Scan or tap for the full solution



Q.55 When $\text{CH}_3\text{CH}_2\text{CHCl}_2$ is treated with NaNH_2 , the product formed is

[AIPMT 2002]

- (1) $\text{CH}_3-\text{CH}=\text{CH}_2$ (2) $\text{CH}_3-\text{C}\equiv\text{CH}$
 (3) $\text{CH}_3\text{CH}_2\text{CH} \begin{array}{l} \nearrow \text{NH}_2 \\ \searrow \text{NH}_2 \end{array}$ (4) $\text{CH}_3\text{CH}_2\text{CH} \begin{array}{l} \nearrow \text{Cl} \\ \searrow \text{NH}_2 \end{array}$

Scan or tap for the full solution



Q.56 Which alkene on ozonolysis gives $\text{CH}_3\text{CH}_2\text{CHO}$ and CH_3COCH_3 ?

[AIPMT 2001]

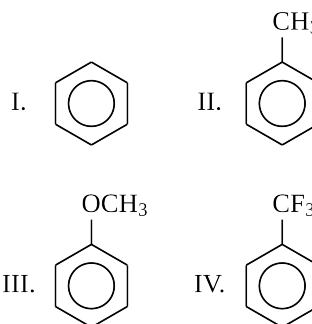
- (1) $\text{CH}_3\text{CH}_2\text{CH}=\text{C} \begin{array}{l} \nearrow \text{CH}_3 \\ \searrow \text{CH}_3 \end{array}$
 (2) $\text{CH}_3\text{CH}_2\text{CH}=\text{CHCH}_2\text{CH}_3$
 (3) $\text{CH}_3\text{CH}_2\text{CH}=\text{CHCH}_3$
 (4) $\begin{array}{c} \text{CH}_3-\text{C}=\text{CHCH}_3 \\ | \\ \text{CH}_3 \end{array}$

Scan or tap for the full solution



Q.57 Increasing order of electrophilic substitution for following compounds

[AIPMT 2000]



- (1) $\text{IV} < \text{I} < \text{II} < \text{III}$ (2) $\text{III} < \text{II} < \text{I} < \text{IV}$
 (3) $\text{I} < \text{IV} < \text{III} < \text{II}$ (4) $\text{II} < \text{III} < \text{I} < \text{IV}$

Scan or tap for the full solution



Q.58 In Friedel-Crafts reaction, toluene can be prepared by

[AIPMT 2000]

- (1) $\text{C}_6\text{H}_6 + \text{CH}_3\text{Cl}$ (2) $\text{C}_6\text{H}_5\text{Cl} + \text{CH}_4$
 (3) $\text{C}_6\text{H}_6 + \text{CH}_2\text{Cl}_2$ (4) $\text{C}_6\text{H}_6 + \text{CH}_3\text{COCl}$

Scan or tap for the full solution



ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9	10	11
Ans.	2	1	2	2	2	3	1	2	3	2	1
Ques.	12	13	14	15	16	17	18	19	20	21	22
Ans.	1	1	4	1	4	2	2	4	4	1	4
Ques.	23	24	25	26	27	28	29	30	31	32	33
Ans.	3	4	3	4	3	3	1	3	1	1	3
Ques.	34	35	36	37	38	39	40	41	42	43	44
Ans.	3	3	2	1	4	1	3	2	4	2	4
Ques.	45	46	47	48	49	50	51	52	53	54	55
Ans.	3	3	4	3	1	2	3	4	2	4	2
Ques.	56	57	58								
Ans.	1	1	1								