Exercise-1

ONLY ONE OPTION CORRECT TYPE

Section (A) : Alkane

1.	Which of the following a (1) n-Pentane	alkanes has the lowest be (2) Isopentane	oiling point? (3) Neopentane	(4) n-Hexane.		
2.	Which of the following a (1) n-Butane	alkanes has the lowest m (2) n-Pentane	elting point ? (3) Propane	(4) n-Hexane.		
3.	The maximum C—C bo (1) C_2H_6	and length is in: (2) C_2H_4	(3) C ₂ H ₂	(4) C ₆ H ₆		
4.	Marsh gas mainly conta (1) C_2H_2	ains: (2) CH ₄	(3) H ₂ S	(4) CO		
5.	When water vapours ar (1) acetaldehyde	e passed over aluminiun (2) ethylene	n carbide, we get: (3) methane	(4) methyl alcohol		
6.	The complete combusti (1) CO + H_2	ion of CH ₄ gives : (2) CO + N ₂	(3) CO + N ₂ O	(4) CO ₂ + H ₂ O		
7.	Action of heat on a mixture of sodium propionate and sodalime produces: (1) methane (2) ethane (3) propane (4) ethylene					
8.	An unknown carboxylic (1) adipic acid	acid salt on kolbe's elec (2) hexanoic acid	trolysis form cyclobutane (3) succinic acid	; the carboxylic acid can be: (4) fumaric acid		
9.	A mixture of two organ obtained as product. Th	nic compound was treat ne two compounds are	ed with sodium metal in	ether solution. Isobutane was		
	(3) Isopropyl chloride and	nd Methyl chloride	(4) Isopropyl chloride and	nd ethyl chloride		
10.	Which among the follov (1) LiAlH₄	ving reagents convert alk (2) Na/dry ether	yl halide into alkane? (3) R₂CuLi	(4) All of these		
11.	20 ml of methane are	burnt with 50 ml of oxy	ygen, the volume of the	gas left after cooling to room		
	(1) 80 ml	(2) 60 ml	(3) 30 ml	(4) 20 ml		
12.	What is the volume of c (1) 4 litre	oxygen required for the th (2) 8 litre	ne complete combustion (3) 12 litre	of 4 litre of ethane? (4) 14 litre		
13.	Assuming petrol is isoc combustion will consum	octane (C ₈ H ₁₈) and has a ne.	density of 0.8 g ml ⁻¹ . 1.	425 litres of petrol on complete		
	(1) 100 moles of O_2	(2) 125 moles of O_2	(3) 150 moles of O_2	(4) 175 moles of O_2		

14.	The reactivity of hydrogen atoms attached to carbon atom in the halogenation of an alkane has the order :						
	(1) tertiary > primary >	secondary	(2) secondary > primary	v > tertiary			
	(3) tertiary > secondary	v > primary	(4) primary > secondary	<pre>/ > tertiary</pre>			
15.	In which of the following	g pairs, the bromination o	of first member is easier t	han the second member?			
	(1) Isobutane, n-butane	9	(2) n-Butane, isobutane				
	(3) Methane, ethane		(4) None of these				
16.	Halogenation of alkane	s is an example of					
	(1) Free radical addition	n reaction	(2) Free radical substitu	tion reaction			
	(3) Nucleophilic substitut	ution reaction	(4) Nucleophilic addition	reaction.			
17.	Which of the following CI_2 ?]	cannot be considered as	a step of mechanism in	chain reaction of methane with			
	(1) $\operatorname{Cl}_2 \longrightarrow \operatorname{Cl}^{\bullet}$		$(2) \operatorname{CH}_4 + \operatorname{CI}^{\bullet} \longrightarrow \operatorname{C}$	H₃CI + H▪			
	$(3) \operatorname{CI}^{\bullet} + \operatorname{CH}_{4} \longrightarrow \operatorname{C}$	H₃• +HCI	$(4) \operatorname{CI}^{\bullet} + \operatorname{CH}_{3}^{\bullet} \longrightarrow \operatorname{C}$	H ₃ CI			
18.	During chlorination of n	nethane to methyl chloric	le, the propagation step i	s represented by			
	(1) CI — CI	(2) CH ₃ CI	(3) $CH_4 + + HCI$ (4) $CI - CI$				
19.	Methane reacts with ex	cess of chlorine in diffus	ed sunlight to give the fin	al product as			
	(1) Chloroform		(2) Carbon tetrachloride				
	(3) Methylene chloride		(4) Methyl chloride.				
20.	A gaseous hydrocarbol and HBr. The hydroca	n 'X' on reaction with bro rbon 'X' is :	mine in light forms a mix	ture of two monobromo alkanes			
		(2)	(3)				
	$(1) \text{ CH}_3^- \text{ CH}_3$	(2)	(0)	(+) + +			
21.	The number of monoch	nloro derivatives of isoher	kane is (Only structural is	omers)			
	(1) 3	(2) 4	(3) 5	(4) 6			
22.	The major product obta CH₃ I	ined in the reaction, :					
	$\xrightarrow{Br_2} hv$						
	CH₂Br	CH ₂ Br	CH ₃	CH ₃			
		Br					
		(2)	(3)	(4)			
	-	-	-	 Br			
23.	lodination of an alkane	is carried out in presence	e of				
	(1) Alcohol	(2) P + I ₂	(3) HNO_3 or HIO_3	(4) A reducing agent			

- 24.What will be the least molecular mass of an alkane which is optically active?(1) 70(2) 80(3) 90(4) 100
- **25.** The maximum ease of abstraction of a hydrogen atom by a chlorine atom is shown by (1) $(CH_3)_3 C-CH_3$ (2) $(CH_3)_2 CH_2$ (3) $C_6H_5CH_3$ (4) $CH_2 = CHCH_3$

Section (B) : Alkene

- Ethylene readily undergoes:
 (1) addition reaction
 (2) substitution reaction
 (3) elimination reaction
 (4) rearrangement reaction
- **2.** Reaction of ethene with Br_2 in CCI_4 gives:
 - (1) Bromoethane

(3) 1, 1-Dibromoethane

- (2) 1, 2-Dibromoethane
- (4) 1, 1, 2, 2-Tetrabromoethane.



10.	Kharasch effect regardi (1) hex–1–ene	ng addition of HBr is not (2) prop–1–ene	observed in : (3) hex–3–ene	(4) pent–1–ene		
11.	Intermediate in the follo CH_3 -CH=CH ₂ .	wing reaction is HCI Peroxide				
	(1) CH ₃ –CH–CH ₃	(2) CH₃−CH−CH₂ I CI	(3) CH ₃ –ĊH–CH ₂ –CI	(4) CH₃–CH–CH₂–CI		
12.	Peroxide effect is obser (1) Only with HBr	rved (2) Only with HI	(3) Only with HCI	(4) Only with HF		
13.	Which of the following r (1) $CH_2 = CH_2$	eacts most readily with c (2) CH ₃ CH=CH ₂	conc. H_2SO_4 ? (3) $(CH_3)_2C = CH_2$	(4) with same rate		
14.	Reaction of HBr with pr (1) isopropyl bromide	opene in the presence o (2) allyl bromide	e of peroxide gives: (3) n-propyl bromide (4) 3-bromopropa			
Section	on (C) :Alkyne					
1.	General fomula C _n H _{2n-2} (1) alkenes	represents: (2) alkanes	(3) alkynes	(4) none		
2.	To prepare But-2-yne fi (1) Zinc dust / Δ	obutane, reagent used is (3) Alc. KOH	: (4) aq. KOH			
3.	Which of the following of (1) CaC ₂	compounds on hydrolysis (2) Mg ₂ C ₃	s gives propyne ? (3) Al ₄ C ₃	(4) Cu ₂ Cl ₂		
4.	Which of the following $(1) CH \equiv CH$	will react most readily wit (2) $CH_2 = CH_2$	h bromine? (3) $CH_{3}CH = CH_{2}$	(4) $CH_3CH_2CH_3$.		
5.	Most Acidic hydrogen is (1) ethyne	s present in: (2) ethene	(3) benzene	(4) ethane		
6.	The product/s obtained (1) $CH_3COCH_2CH_2CH_3$ (3) $CH_3CH_2CH_2COOH -$	when 1-pentyne is react + HCOOH	ed with H_2O , H^+ , Hg^{+2} is (2) $CH_3CH_2COCH_2CH_3$ (4) $CH_3CH_2CH_2CH_2CO$	′are OH.		
7.	$CH_3 - C \equiv C - CH_3 - (1)$	$\xrightarrow{H_2/Pd/CaCO_3 \text{ or } BaSO_4} X$				
	(1) (d)-2, 3-Dibromobutane (3) (dl)-2, 3-Dibromobutane		(2) (I)-2, 3-Dibromobutane (4) meso-2, 3-Dibromobutane			
8.	Acetylene reacts with e (1) Acetylene tetrachlor (3) Acetaldehyde	xcess of hypochlorous a ide	cid to produce (2) Acetylene chlorohyo (4) Dichloroacetaldehyo	drin de.		
9.	1-Butyne can be conve (1) HBr (3) Br ₂ and H ₂ O	rted into 1-bromo-1-bute	ne by reacting it with whi (2) HBr and (C_6H_5 COC (4) Br ₂ and CCI ₄	ch of the following reagent? P_{2}		

10.	When 1-butyne is treated with excess of HBr, the expected product is (1) 1, 2-Dibromobutane (2) 2, 2-Dibromobutane (3) 1, 1-Dibromobutane (4) All the above								
11.	Acetylene on treatment (1) acetaldehyde	with dil. H ₂ SO ₄ having H (2) acetic acid	lgSO₄ gives : (3) ethanol	(4) ethylene					
12.	A five carbon atom alky (1) $CH_3CH_2CH_2C \equiv CH$	ne forms a sodium salt $(2) CH_3C = CCH_2CH_3$	on treatment with sodami (3) $(CH_3)_2 CHC = CH$	de. The alkyne is (4) Either (1) or (3).					
13.	Which of the following reagents will distinguish between 1-butyne and 2-butyne?(1) Br_2 / CCI_4 (2) $AgNO_3 + NH_4OH$ (3) Dil. Cold $KMnO_4$ (4) $KMnO_4$								
Sectio	on (D) :Miscellaneo	us Questions							
1.	$CH_{3}CH_{3} + HNO_{3} - \frac{675K}{2}$ (1) $CH_{3}CH_{2}NO_{2}$ (3) $2CH_{3}NO_{2}$	→ ?	(2) $CH_{3}CH_{2}NO_{2} + CH_{3}N$ (4) $H_{2}C=CH_{2}$	10 ₂					
2.	Isomerization of an alkane may be carried out by using (1) AI_2O_3 (2) HI/P (3) Anhyd. AICI ₃ at 300°C in presence of HCI (4) Conc. H_2SO_4 .								
3.	Converting n-hexane into benzene in the presence of chromium oxide on alumina supportsof a(1) Hydrogenation reaction(2) Isomerisation reaction(3) Aromatization reaction(4) Substitution reaction.								
4.	The gas, which is used (1) CH_4	for artificial ripening of fr (2) C_2H_4	ruits, is: (3) C ₂ H ₆ (4) none						
5.	Ethylene combines with (1) Phosgene (3) Methyl isocyanate (I	n sulphur monochloride to MIC)	o form (2) Mustard gas (4) Lewisite.						
6.	Structural fomula for lev CHCI (1) CHAsCI ₃	visite is: CHCI (2) CHAsCI	CHCI (3) ║ CHAsCI₂	(4) ∥ CHAsCl₂					
7.	Acetylene is used as ar (1) narcylene	n anaesthetic under the r (2) pyrene	name of: (3) neoprene	(4) pyroline					
	Exercise-	2							
	OI	NLY ONE OPTIO	N CORRECT TYP	PE					
1.	Which of the following a (1) $(CH_3)_2CH - CH_2 - C$	alkanes can be synthesiz H (CH ₃) ₂	ed by the Wurtz reaction (2) $(CH_3)_2CH - CH_2 - C$	i in good yield ? H ₂ – CH (CH ₃) ₂					

(3) $CH_3 - CH_2 - C(CH_3)_2CH_2 - CH_3$

(4) $(CH_3)_3C - CH_2 - CH_2 - CH_3$

2. The product formed in the reaction



- **3.** Propanoic acid or its sodium salt can be converted into alkanes by reduction with HI/red P or decarboxylation reaction or kolbe's reduction. Which of the following alkanes is not formed in any of these reactions ?
 - (1) Methane (2) Ethane (3) Propane (4) Butane
- 4. In the following reaction sequence

5. Which statement is correct about photochemical bromination of Butane

 $\mathsf{CH}_{_3}-\mathsf{CH}_{_2}-\mathsf{CH}_{_2}-\mathsf{CH}_{_3} \xrightarrow{\quad \mathsf{Br}_{_2}, \ \mathsf{h}_{^{\scriptscriptstyle U}}} \rightarrow$

(1) 1-Bromobutane and 2-Bromobutanes are formed in equal amounts.

(2) 2-Bromobutane is formed with faster rate than 2-chlorobutane in the other experiment of chlorination.

(3) The major product is an equimolar mixture of two compounds

(4) Homolysis of C – H bond has lower activation energy than homolysis of Br – Br bond.

- 6. The number of possible enantiomer pairs that can be produced during monochlorination of 2methylbutane is
 - (1) 2 (2) 3 (3) 4 (4) 1
- 7. Chlorination of butane takes place as,

$$CH_{3}-CH_{2}-CH_{2}-CH_{3}+CI_{2} \xrightarrow{h_{V}} CH_{3}-CH_{2}-CH_{2}-CH_{3}+CH_{3}-CH_{2$$

Consider the following relative reactivity of C – H bonds for chlorination.

Degree of C – H	1° C – H	2° C – H	3° C – H		
Relative reactivity for chlorination (RR)	1	3	5		

Percentage yield of 2-chlorobutane will be :

(1)
$$\frac{12}{18} \times 100$$
 (2) $\frac{20}{18} \times 100$ (3) $\frac{6}{18} \times 100$ (4) $\frac{3}{18} \times 100$









[AIPMT 2012]

[AIPMT 2014]

[NEET-1 2016]

[NEET- 2017]

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

(1) NaNH₂ (2) HCI (3) O₂ (4) Br₂

15. Which of the following organic compounds has same hybridization as its combustion product $-(CO_2)$? [AIPMT 2014]

16. Identify Z in the sequence of reactions : $CH_3CH_2CH=CH_2 \xrightarrow{HBr} Y \xrightarrow{C_2H_5ONa} Z$ (1) $CH_3-(CH_2)_3-O-CH_2CH_3$ (3) $CH_3(CH_2)_4-O-CH_3$

17. Which of the following is the most **correct** electron displacement for a nuclephilic reaction to take place ? [AIPMT

(2) (CH₃)₂CH₂-O-CH₂CH₃

(4) CH₃CH₂-CH(CH₃)-O-CH₂CH₃

2015]
(1)
$$H_3C \rightarrow C = C - C I$$

(2) $H_3C \rightarrow C = C - C I$
(3) $H_3C \rightarrow C = C - C I$
(4) $H_3C \rightarrow C = C - C I$

 In which of the following compounds, the C–Cl bond ionisation shall give most stable carbonium ion ? [AIPMT 2015]

(1)
$$\begin{array}{c} H_3C \\ H_3C \\ H_3C \\ CH_3 \end{array}$$
 (2) (2) (3) $\begin{array}{c} H_3C \\ O_2NH_2C \\ H_3C \\ H_3$

19. In the reaction

 $\begin{array}{l} H-C \equiv CH & \xrightarrow{(1)NaNH_2/liq,NH_3} \\ & \xrightarrow{(2)CH_3CH_2Br} \end{array} x \xrightarrow{(1)NaNH_2/liq,NH_3} y \\ X \text{ and } Y \text{ are :} \\ (1) X = 1-Butyne \ ; \ y = 2-Hexyne \\ (3) X = 2-Butyne \ ; \ y = 3-Hexyne \\ \end{array}$ $\begin{array}{l} (2) X = 1-Butyne \ ; \ y = 3-Hexyne \\ (4) X = 2-Butyne \ ; \ 2 = 2-Hexyne \end{array}$

20. Predict the correct intermediate and product in the following reaction :

$$H_{3}C - C \equiv CH_{H_{2}O,H_{2}SO_{4}} \xrightarrow{\text{intermediate}} \text{product}$$

$$(1) A : H_{3}C - C \equiv CH_{2} \qquad B : H_{3}C - C - CH_{3} \qquad (2) A : H_{3}C - C = CH_{2} \qquad B : CH_{3} - C - CH_{2}$$

$$SO_{4} \qquad O \qquad OH \qquad SO_{4}$$

$$(3) A : CH_{3} - C - CH_{3} \qquad B : H_{3}C - C \equiv CH \qquad (4) A : H_{3}C - C = CH_{2} \qquad B : H_{3}C - C - CH_{3}$$

$$O \qquad OH \qquad OH \qquad OH$$

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) CH≡CH
 (2) CH₄
 (3) CH₃-CH₃
 (4) CH₂=CH₂

[NEET-2- 2019]

22. An alkene "A" on reaction with O₃ and Zn gives propanone and ethanol in equimolar Addition of HCl to alkene "A" gives "B" as the product. The structure of product "B" is: **[NEET-1-2019]**

(1)	H ₃ C − CH − CH CI CH ₃	

 $\begin{array}{c} (3) & CH_2CI \\ | \\ H_3C - CH_2 - CH - CH_3 \end{array}$

(2)
$$CI - CH_2 - CH_2 - CH_1$$

(2) $CI - CH_2 - CH_2 - CH_1$
(4) $H_3C - CH_2 - C - CH_3$
(4) $H_3C - CH_2 - C - CH_3$

23. Match the catalyst with the pocess : Catalys

(i) V₂O₅
(ii) TiCl₄ + Al(CH₃)₃
(iii) PdCl₂
(iv) Nickel complexes
(1) (i)- (c), (ii)- (d), (iii)- (a), (iv)- (b)
(3) (i)- (a), (ii)- (c), (iii)- (b), (iv)- (d)

Process

(a) The oxidation of ethyne to ethanal

- (b) Polymerisation
- (c) Oxidation of SO₂ in the manufacture of H₂SO₄
- (d) Polymerisation of ethylene
- (2) (i)– (a), (ii)– (b), (iii)– (c), (iv)– (d)
- (4) (i)– (c), (ii)– (a), (iii)– (d), (iv)– (b)

PART - II : AIIMS QUESTION (PREVIOUS YEARS)

1.	Which of the following of (1) $CH_3CHCH_2CH_2BrCO$ (3) $CH_2BrCH_2(CH_2)_2CO$	compound is formed whe DOH OH	tion $CH_2=CH(CH_2)_2$ COOH react with HBr ? [AIIMS 2000] (2) $CH_3CHBrCH_2CH_2COOH$ (4) $CH_3CH_2CH_2BrCH_2COOH$			
2.	With ammoniacal cupro	ous chloride solution a re-	ddish brown precipitate is obtained on treating with :			
	(1) CH ₄	(2) C ₂ H ₄	(3) $C_2 H_2$	(4) C ₃ H ₆		
3.	Acetone can easily be (1) HI	converted into propane b (2) H ₃ PO ₃	by the action of : (3) HNO ₃	(4) HIO ₃	[AIIMS 2002]	
4.	The number of σ and π (1) 3, 10	bonds present in pent-1- (2) 9, 4	ene-4-yne is : (3) 4, 9	(4) 10, 3	[AIIMS 2002]	
5.	Acetylene and dil H SC) reacts to produce :	[AIPMT 1999, AIIMS 2002, RPMT 2003,04 (3) CH ₃ COCH ₃ (4) None of these			
	(1) CH ₃ COOH	(2) CH_3CHO	(3) CH ₃ COCH ₃	(4) None of the	se	
6.	(1) CH_3COOH Propan -1-ol can be pre (1) H_2O / H_2SO_4 (3) B_2H_6 followed by H_2O	(2) $CH_{3}CHO$ epared from propene by : D_{2}	(3) CH_3COCH_3 (2) $Hg (OAc)_2 / H_2O follo(4) CH_3CO_2H / H_2SO_4$	(4) None of the owed by NaBH ₄	se [AIIMS 2003]	
6. 7.	(1) CH ₃ COOH Propan -1-ol can be pre (1) H ₂ O / H ₂ SO ₄ (3) B ₂ H ₆ followed by H ₂ O 3-phenylpropene on rea (1) C ₆ H ₅ CH(Br)CH ₂ CH ₃ (3) C ₆ H ₅ CH ₂ CH ₂ CH ₂ Br	(2) $CH_{3}CHO$ epared from propene by : O_{2} action with HBr gives (as	(3) CH ₃ COCH ₃ (2) Hg (OAc) ₂ / H ₂ O follo (4) CH ₃ CO ₂ H / H ₂ SO ₄ a major product) : (2) C ₆ H ₅ CH ₂ CH (Br) CH (4) C ₆ H ₅ CH(Br) CH = CH	(4) None of the owed by NaBH ₄ $^{3}_{H_2}$	[AIIMS 2003]	

HYDROCARBON

9.	Which of the following s into $C_6H_5CH = CH_2$?	eagents) can be used for	for the conversion of C ₆ H ₅ CH ₂ CH [AIIMS 2006]					
	(1) $SOCI_2$; H_2O	(2) SO_2Cl_2 ; alc. KOH	(3) Cl_2 / hv ; H_2O	(4) $SOCI_2$; alc.	КОН			
10.	The compound which is followed by acetic acid ((1) CH ₂ CH ₂ CH ₂ OH	s obtained by treating ch gives : (2) CH ₃ CH ₂ CH ₃	nloropropane with alcohc (3) CH ₃ CH(OH)CH	lic KOH, when r (4) CH ₃ CH ₂ CH(eacts BH ₃ /THF [AIIMS 2009] DHCH ₃			
11.	Formation of alcohol by (1) Involves carbocation (3) Is stereospecific	oxymercuration demerc	uration of alkenes : (2) Involves carbanions (4) Does not involve rea	and rearrangem arrangement and	[AIIMS 2009] nent carbocation			
12.	Which of the following r	eaction has zero activation	on energy ?		[AIIMS 2010]			
	(1) $CH_4 + CI \longrightarrow CH$	မှ + HCl	(2) $\operatorname{Cl}_2 \longrightarrow 2 \operatorname{Cl}$					
	$(3) \stackrel{\bullet}{CH}_{3} + \stackrel{\bullet}{CH}_{3} \longrightarrow$	$CH_3 - CH_3$	(4) CH ₃ + CI – CI –	$\rightarrow CH_3 - CI + CI$				
13.	Structural formula of Le CHCI (1) CHAsCb	wisite is : CHCI (2) CHAsCI	CHCI (3) ∥ CHAsC⊵	CH₂ (4) ∥ CHAsC♭	[AIIMS 2010]			
14.	The number of σ -and π (1) 10, 3	bonds present in pent-1 (2) 4, 9	-en-4-yne is : (3) 3, 10	(4) 9, 4	[AIIMS 2011]			
15.	In a hydrocarbon, mass	ratio of hydrogen and ca	arbon is 1:3, the empirica	al formula of hyd	rocarbon is			
	(1) CH ₄	(2) CH ₂	(3) C ₂ H	(4) CH ₃	[AIIMS 2012]			
16.	Which one of the follow (1) CH_4	ing cannot be prepared t (2) C_2H_6	by Wurtz reaction ? (3) C ₃ H ₈	(4) C ₄ H ₁₀	[AIIMS 2012]			
17.	The product of the follow	wing reaction is	$(i) BH_3/THF$ $(ii) H_2O_2,OH$		[AIIMS 2013]			
	(1) 1-Pentanol	(2) 2-Pentanol	(3) Pentane	(4) 1,2-Pentane	ediol			
18.	$CH_3 - CH_2 - CH = CH_2 + H_2$	$HBr \xrightarrow{ROOR(peroxide)} (X)$ Major	+ (Y) Minor		[AIIMS 2015]			
	X and Y respectively and (1) $BrCH_2$ — CH_2 — $CH=0$ (2) C_2H_5 — CH_2 — CH_2Br	e: CH₂ and C₂H₅—CHBr—C and Br—CH₂—CH₂—CH	:H ₃ I=CH ₂					
	$(3) C_2H_5 - CH_2 - CH_2Br$	and C_2H_5 — $CHBr$ — CH_3	-					
	(4) C_2H_5 —CH ₃ and C_2H_5 —CH ₂ —CH ₂ Br							



3.	Alkyl halides react with (1) alkenes	dialkyl copper reagents (2) alkyl copper halides	to give 3 (3) alkanes	[AIEEE 2005] (4) alkenyl halides		
4.	Reaction of one molect (1) 3-bromobutene und (2) 1-bromo-2-butene und (3) 3-bromobutene und (4) 1-bromo-2-butene u	ule of HBr with one mole ler kinetically controlled o inder thermodynamically ler thermodynamically co inder kinetically controlle	cule of 1, 3-butadiene at conditions controlled conditions ontrolled conditions. ed conditions.	40°C gives predominantly [AIEEE 2005]		
5.	Which of the following (1) CH = CH + 2HBr \rightarrow (3) CH ₂ - C = CH + 2H	reactions will yield 2, 2- $ m c$ Br $ m m m m m m m m m m m m m $	dibromopropane? [AIEEE-2007, 3/120] (2) $CH_3 - CH = CH_2 + HBr \rightarrow$ (4) $CH CH = CHBr + 2HBr \rightarrow$			
6.	The hydrocarbon which (1) $CH_3CH_2 C \equiv CH$ (3) $CH_3CH_2C \equiv CCH_2C$	n can react with sodium in H ₃	n liquid ammonia is (2) $CH_3CH = CHCH_3$ (4) $CH_3CH_2CH_2C = CC$	[AIEEE-2008, 3/105] :H ₂ CH ₂ CH ₃		
7.	One mole of a symme	trical alkene on ozonoly	sis gives two moles of a	n aldehyde having a molecular		
	(1) propane	(2) 1-butene	(3) 2-butene	(4) ethene		
8.	How many chiral comp (1) 8	ounds are possible on m (2) 2	onochlorination of 2- me (3) 4	thyl butane ? [AIEEE-2012] (4) 6		
9.	Which branched chain mono substituted alkyl (1) Tertiary butyl chlorid (3) Isohexane	isomer of the hydrocarl halide ? de	bon with molecular mas (2) Neopentane (4) Neohexane	s 72u gives only one isomer of [AIEEE-2012]		
10.	2– Hexyne gives trans (1) Pt/H ₂	–2–Hexene on treatmen (2) Li / NH ₃	t with : (3) Pd/BaSO₄	[AIEEE-2012] (4) Li AIH ₄		
11.	The major organic com	pound formed by the rea	action of 1,1,1- trichloroe	thane with silver powder is :		
	(1) Acetylene	(2) Ethene	(3) 2-Butyne	[JEE MAIN-2014] (4) 2-Butene		
12.	Which of the following (1) 1-Phenyl-2-butene (3) 2-Phenyl-1-butene	compound will exhibit ge	ometrical isomerism ? (2) 3-Phenyl-1-butene (4) 1,1-Diphenyl-1-prop	[JEE MAIN-2015]		
13.	The reaction of proper	ne with HOCI ($CI_2 + H_2O$)	proceeds through the ir	ntermediate : [JEE MAIN-2016]		
	(1) $CH_3 - CH^+ - CH_2 - CH_$		(2) $CH_3 - CH(OH) - CH$	1 ⁺ 2		
	$(3) CH_3 - CHCI - CH_2^+$		(4) $CH_3 - CH^+ - CH_2 - C$	ЭН		
14.	The product of the read $ \begin{array}{r} 1. \text{ NBS}/h\nu \\ \hline 2. \text{ H}_2\text{O}/\text{K}_2\text{CC} \end{array} $	ction give below is : → X		[JEE MAIN-2016]		
			(3) CO ₂ H	(4)		







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21. The major product of the following reaction is



22. The major product of the following reaction is : $CH_{3}CH_{2}CH-CH_{2} \xrightarrow[(i) KOH alc.]{(ii) NaNH_{2}}}_{Br Br Br in liq.NH_{3}}$

(1) $CH_3CH=C=CH_2$ (2) $CH_3CH=CHCH_2NH_2$ (3) $CH_3CH_2C=CH$

(4) CH₃CH₂CH–CH₂ | | NH₂ NH₂

(4)

23. The major product in the following conversion is:



[JEE MAIN-2019]



[JEE MAIN-2019]

		nsv	<i>ier</i> s										
						FYFR	CISE	- 1					
SECT													
1.	(3)	2.	(3)	3.	(1)	4.	(2)	5.	(3)	6.	(4)	7.	(2)
8.	(1)	9.	(3)	10.	(4)	11.	(3)	12.	(4)	13.	(2)	14.	(3)
15.	(1)	16.	(2)	17.	(2)	18.	(3)	19.	(2)	20.	(3)	21.	(3)
22.	(3)	23.	(3)	24.	(4)	25.	(3)		. ,				
SECT	TION (B))											
1.	(1)	2.	(2)	3.	(2)	4.	(2)	5.	(1)	6.	(4)	7.	(2)
8.	(1)	9.	(3)	10.	(3)	11.	(1)	12.	(1)	13.	(3)	14.	(3)
SECT)											
1.	(3)	2.	(1)	3.	(2)	4.	(3)	5.	(1)	6.	(1)	7.	(3)
8.	(4)	9.	(2)	10.	(2)	11.	(1)	12.	(4)	13.	(2)		
SECT	ION (D))											
1.	(2)	2.	(3)	3.	(3)	4.	(2)	5.	(2)	6.	(3)	7.	(1)
						EXER	CISE	- 2					
1.	(2)	2.	(4)	3.	(1)	4.	(4)	5.	(3)	6.	(1)	7.	(1)
8.	(1)	9.	(1)	10.	(2)	11.	(4)	12.	(2)	13.	(1)	14.	(2)
15.	(2)	16.	(2)	17.	(1)	18.	(3)	19.	(4)	20.	(1)	21.	(3)
						EXER	CISE	- 3					
						P	ART-I						
1.	(2)	2.	(3)	3.	(1)	4.	(2)	5.	(4)	6.	(2)	7.	(2)
8.	(4)	9.	(4)	10.	(3)	11.	(2)	12.	(3)	13.	(1)	14.	(1)
15.	(2)	16.	(1)	17.	(2)	18.	(1)	19.	(2)	20.	(4)	21.	(2)
22.	(4)	23.	(1)										
		•				PA		_		•		_	
1.	(2)	2.	(3)	3.	(1)	4.	(4)	5.	(2)	6.	(3)	1.	(1)
ð. 15	(Z) (1)	9. 16	(2)	10. 17	(Z) (1)	11.	(4)	12. 10	(3)	13. 20	(3)	14. 21	(1)
15. 22	(1)	10.	(1)	17.	(1)	10.	(3)	19.	(4)	20.	(2)	21.	(2)
££.	(~)					ΡΑ	RT-III						
1.	(1)	2.	(2)	3.	(3)	4.	(2)	5.	(3)	6.	(1)	7.	(3)
8.	(3)	9.	(2)	10.	(2)	11.	(3)	12.	(1)	13.	(1 / B	onus)	\ - <i>\</i>
14.	(1)	15.	(3)	16.	(1)	17.	(1)	18.	(2)	19.	(1)	20.	(3)
21.	(4)	22.	(3)	23.	(1) ea	a							