## LHR-I-21

(Academic Sessions 2017 – 2019 (2021)  PAPER – II (Objective Type) GROUP – II Maximum Marks: 17  PAPER CODE = 8483  Note: Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.  1-1 Hydrogen bond is the strongest between the molecules of:  (A) HF (B) HCl (C) HBr (D) HI  2 Formula of chloroform is:  (A) CH <sub>3</sub> Cl (B) CCl <sub>4</sub> (C) CH <sub>2</sub> Cl <sub>2</sub> (D) CHCl <sub>3</sub> 3 Ketones are prepared by the oxidation of:  (A) Primary alcohol (B) Secondary alcohol (C) Tertiary alcohol (D) All of these  4 Which is not a calcarious material:  (A) Lime (B) Clay (C) Marble (D) Maruse shell  5 Keeping in view the size of atoms, which order is the correct one:  (A) Mg > Sr (B) Ba > Mg (C) Lu > Ce (D) Cl > I  (A) Mg > Sr (B) Ba > Mg (C) Lu > Ce (D) Cl > I  (A) Al (B) B (C) Si (D) C  8 For which mechanish the first step involved is the same:  (A) El and E2 (B) E2 and S <sub>3</sub> 2 (C) S <sub>3</sub> and S <sub>3</sub> 2 (D) El and S <sub>3</sub> 1  9 Which of the following is not a fatity acid (A) Propancic acid (B) Butyric and (C) Valeric acid (D) Phthalic acid  10 Which one of the following is not a fatity acid (C) Fig. (D) Co  11 Which of the following sulphares is notestable a water:  (A) Sodium sulphate (D) Barium sulphate  (C) Zine sulphate (D) Barium sulphate  (C) Zine sulphate (D) Barium sulphate  (C) Zine sulphate (D) Barium sulphate  (A) Fluorine (B) Chlorine (C) Bromine (D) Iodine  14 The electrophile in aromatic sulphonation is:  (A) M <sub>2</sub> SO <sub>4</sub> (B) HSO <sub>4</sub> (C) SO <sub>3</sub> (D) SO <sub>3</sub> <sup>+</sup> 15 Laughing gas is chemically:  (A) NO (B) N <sub>2</sub> O (C) NO <sub>2</sub> (D) N <sub>2</sub> O <sub>5</sub> 16 The carbon atom of a carboxyl group is hybridized:  (A) Sp (B) Sp <sup>2</sup> (C) Sp <sup>3</sup> (D) dsp <sup>2</sup>	Roll No.		(	To be filled in by the	e candidate)	
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Which of the following is not a fatty acid  (A) Sc (B) As (C) Si (D) Phthalic acid  (B) Which of the following sulphates is not acid with which set of hybrid orbitals:  (A) Sodium sulphate (D) Barium sulphate  (C) Zinc sulphate (D) Barium sulphate  (C) Zinc sulphate (D) Barium sulphate  (C) Zinc sulphate (D) Barium sulphate  (A) Sp (B) Sp² (C) Sp³ (D) Sog³  (D) Sog³  (D) Marine shell  (D) Marine shell  (D) Marine shell  (E) Si (D) Cl > I  (D) Cl > I  (E) Si (D) C  (D) Si (D) C  (E) Si (C) Si (D) C  (E) Si (C) Si (C) Si (D) Si (C) Si (C	3	Ketones are prepared by the oxidation of:				
Which of the following is not a fatty acid  (A) Sc (B) As (C) Si (D) Phthalic acid  (B) Which of the following sulphates is not acid with which set of hybrid orbitals:  (A) Sodium sulphate (D) Barium sulphate  (C) Zinc sulphate (D) Barium sulphate  (C) Zinc sulphate (D) Barium sulphate  (C) Zinc sulphate (D) Barium sulphate  (A) Sp (B) Sp² (C) Sp³ (D) Sog³  (D) Sog³  (D) Marine shell  (D) Marine shell  (D) Marine shell  (E) Si (D) Cl > I  (D) Cl > I  (E) Si (D) C  (D) Si (D) C  (E) Si (C) Si (D) C  (E) Si (C) Si (C) Si (D) Si (C) Si (C		(A) Primary alcohol (B) Secondary alcohol (C) Tertiary alcohol (D) All of these				
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Keeping in view the size of atoms, which order is the correct one:  (A) Mg > Sr (B) Ba > Mg (C) Lu > Ce (D) Cl > I  Rectified spirit contains tity! alcohol:  (A) 80% (B) 88% (C) 90% (D) 95%  Tincal is a mineral of (A) Al (B) B (C) Si (D) C  For which mechanism the first step involved is the same:  (A) E1 and E2 (B) E2 and Sy 2 (C) Sy 1 and Sy 2 (D) E1 and Sy 1  Which of the following is not a fatty acid (A) Propanoic acid (B) Butyric acid (C) Valeric acid (D) Phthalic acid (A) Propanoic acid (B) Butyric acid (C) Ra (D) Co  Which one of the following is a typical transition metal:  (A) Sc (B) Yes (C) Ra (D) Co  Which of the following sulphates is not state:  (A) Sodium sulphate (B) Potassitum sulphate  (C) Zinc sulphate (D) Barium sulphate  (C) Zinc sulphate (D) Barium sulphate  12 Linear shape is associated with which set of hybrid orbitals:  (A) Sp (B) Sp <sup>2</sup> (C) Sp <sup>3</sup> (D) dsp <sup>2</sup> 13 Which halogen occurs in a positive oxidation state:  (A) Fluorine (B) Chlorine (C) Bromine (D) Iodine  14 The electrophile in aromatic sulphonation is:  (A) H <sub>2</sub> SO <sub>4</sub> (B) HSO <sub>4</sub> (C) SO <sub>3</sub> (D) SO <sub>3</sub> <sup>+</sup> 15 Laughing gas is chemically:  (A) NO (B) N <sub>2</sub> O (C) NO <sub>2</sub> (D) N <sub>2</sub> O <sub>5</sub> 16 The carbon atom of a carboxyl group is hybridized:  (A) Sp (B) Sp <sup>2</sup> (C) Sp <sup>3</sup> (D) dsp <sup>2</sup>				(C) Marble	(D) Marine shell	
Rectified spirit contains the lacohol:  (A) 80% (B) 85% (C) 90% (D) 95%  7 Tincal is a mineral of (A) Al (B) B (C) Si (D) C  8 For which mechanism the first step involved is the same:  (A) E1 and E2 (B) E2 and Sy2 (C) Sy1 and Sy2 (D) E1 and Sy1  9 Which of the following is not a fatty acid  (A) Propanoic acid (B) Butyric acid (C) Valeric acid (D) Phthalic acid  10 Which one of the following is a typical transition metal:  (A) Sc (B) (C) Ra (D) Co  11 Which of the following sulphates is not a fatty acid (C) Ra (D) Co  12 Cylinc sulphate (B) Potassium sulphate  (C) Zinc sulphate (D) Barium sulphate  (C) Zinc sulphate (D) Barium sulphate  12 Linear shape is associated with which set of hybrid orbitals:  (A) Sp (B) Sp2 (C) Sp3 (D) dsp2  13 Which halogen occurs in a positive oxidation state:  (A) Fluorine (B) Chlorine (C) Bromine (D) Iodine  14 The electrophile in aromatic sulphonation is:  (A) H <sub>2</sub> SO <sub>4</sub> (B) HSO <sub>4</sub> (C) SO <sub>3</sub> (D) SO <sub>3</sub> <sup>+</sup> 15 Laughing gas is chemically:  (A) NO (B) N <sub>2</sub> O (C) NO <sub>2</sub> (D) N <sub>2</sub> O <sub>5</sub> 16 The carbon atom of a carboxyl group is hybridized:  (A) Sp (B) Sp <sup>2</sup> (C) Sp <sup>3</sup> (D) dsp <sup>2</sup>	5	Keeping in view the size of atoms, which order is the correct one:				
Rectified spirit contains they alcohol:  (A) 80% (B) 85% (C) 90% (D) 95%  Tincal is a mineral of (A) Al (B) B (C) Si (D) C  For which mechanism the first step involved is the same:  (A) E1 and E2 (B) E2 and S <sub>N</sub> 2 (C) S <sub>N</sub> 1 and S <sub>N</sub> 2 (D) E1 and S <sub>N</sub> 1  Which of the following is not a fatty acid (A) Propanoic acid (B) Butyre acid (C) Valeric acid (D) Phthalic acid (A) Sc (B) (C) Ra (D) Co  Which one of the following is a typical transition metal:  (A) Sc (B) (C) Ra (D) Co  Which of the following sulphates is not a fatty acid water:  (A) Sodium sulphate (B) Potassium sulphate  (C) Zinc sulphate (D) Barium sulphate  (C) Zinc sulphate (D) Barium sulphate  12 Linear shape is associated with which set of hybrid orbitals:  (A) sp (B) sp² (C) sp³ (D) dsp²  13 Which halogen occurs in a positive oxidation state:  (A) Fluorine (B) Chlorine (C) Bromine (D) Iodine  14 The electrophile in aromatic sulphonation is:  (A) H <sub>2</sub> SO <sub>4</sub> (B) HSO <sub>4</sub> (C) SO <sub>3</sub> (D) SO <sub>3</sub> <sup>+</sup> 15 Laughing gas is chemically:  (A) NO (B) N <sub>2</sub> O (C) NO <sub>2</sub> (D) N <sub>2</sub> O <sub>5</sub> 16 The carbon atom of a carboxyl group is hybridized:  (A) sp (B) sp² (C) sp³ (D) dsp²		$(A) Mg > Sr \qquad (B)$	Ba > Mg	C) Lu > Ce	(D) $C\ell > I$	
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Tincal is a mineral of (A) Al (B) B (C) Si (D) C  8 For which mechanism the first step involved is the same:  (A) El and E2 (B) E2 and Sy2 (C) Sy1 and Sy2 (D) E1 and Sy1  9 Which of the following is not a fatty acid (A) Propanoic acid (B) Butyric acid (C) Valeric acid (D) Phthalic acid  10 Which one of the following is a typical transition metal:  (A) Sc (B) Y (C) Ra (D) Co  11 Which of the following sulphates is not acid transition metal:  (A) Sodium sulphate (B) Potassium sulphate  (C) Zinc sulphate (D) Barium sulphate  12 Linear shape is associated with which set of hybrid orbitals:  (A) sp (B) sp² (C) sp³ (D) dsp²  13 Which halogen occurs in a positive oxidation state:  (A) Fluorine (B) Chlorine (C) Bromine (D) Iodine  14 The electrophile in aromatic sulphonation is:  (A) H <sub>2</sub> SO <sub>4</sub> (B) HSO <sub>4</sub> (C) SO <sub>3</sub> (D) SO <sub>3</sub> <sup>+</sup> 15 Laughing gas is chemically:  (A) NO (B) N <sub>2</sub> O (C) NO <sub>2</sub> (D) N <sub>2</sub> O <sub>5</sub> 16 The carbon atom of a carboxyl group is hybridized:  (A) sp (B) sp² (C) sp³ (D) dsp²		(A) 80% (B)	85%	(C) 90%	(D) 95%	
For which mechanism the first step involved is the same:  (A) E1 and E2 (B) E2 and S <sub>N</sub> 2 (C) S <sub>N</sub> 1 and S <sub>N</sub> 2 (D) E1 and S <sub>N</sub> 1  9 Which of the following is not a fatty acid (A) Propanoic acid (B) Butyric acid (C) Valeric acid (D) Phthalic acid  10 Which one of the following is a typical transition metal:  (A) Sc (B) (C) Ra (D) Co  11 Which of the following sulphates is not a fatty acid (C) Ra (D) Co  12 Which of the following sulphates is not a fatty acid (C) Ra (D) Co  13 Which associated (B) Potassium sulphate (C) Zinc sulphate (D) Barium sulphate (C) Zinc sulphate (D) Barium sulphate (C) Zinc sulphate (D) Barium sulphate (C) Sp <sup>3</sup> (D) dsp <sup>2</sup> 13 Which halogen occurs in a positive oxidation state:  (A) Fluorine (B) Chlorine (C) Bromine (D) Iodine  14 The electrophile in aromatic sulphonation is:  (A) H <sub>2</sub> SO <sub>4</sub> (B) HSO <sub>4</sub> (C) SO <sub>3</sub> (D) SO <sub>3</sub> <sup>+</sup> 15 Laughing gas is chemically:  (A) NO (B) N <sub>2</sub> O (C) NO <sub>2</sub> (D) N <sub>2</sub> O <sub>5</sub> 16 The carbon atom of a carboxyl group is hybridized:  (A) sp (B) sp <sup>2</sup> (C) sp <sup>3</sup> (D) dsp <sup>2</sup>	7	Tincal is a mineral of	3. · · · · · ·	(3) 23.0	(D) 7570	
For which mechanism the first step involved is the same:  (A) E1 and E2 (B) E2 and S <sub>N</sub> 2 (C) S <sub>N</sub> 1 and S <sub>N</sub> 2 (D) E1 and S <sub>N</sub> 1  9 Which of the following is not a fatty acid (A) Propanoic acid (B) Butyric acid (C) Valeric acid (D) Phthalic acid  10 Which one of the following is a typical transition metal:  (A) Sc (B) (C) Ra (D) Co  11 Which of the following sulphates is not a fatty acid (C) Ra (D) Co  12 Which of the following sulphates is not a fatty acid (C) Ra (D) Co  13 Which associated (B) Potassium sulphate (C) Zinc sulphate (D) Barium sulphate (C) Zinc sulphate (D) Barium sulphate (C) Zinc sulphate (D) Barium sulphate (C) Sp <sup>3</sup> (D) dsp <sup>2</sup> 13 Which halogen occurs in a positive oxidation state:  (A) Fluorine (B) Chlorine (C) Bromine (D) Iodine  14 The electrophile in aromatic sulphonation is:  (A) H <sub>2</sub> SO <sub>4</sub> (B) HSO <sub>4</sub> (C) SO <sub>3</sub> (D) SO <sub>3</sub> <sup>+</sup> 15 Laughing gas is chemically:  (A) NO (B) N <sub>2</sub> O (C) NO <sub>2</sub> (D) N <sub>2</sub> O <sub>5</sub> 16 The carbon atom of a carboxyl group is hybridized:  (A) sp (B) sp <sup>2</sup> (C) sp <sup>3</sup> (D) dsp <sup>2</sup>		(A) Al (B)	B (	C) Si	(D) C	
Which of the following is not a fatty acid  (A) Propanoic acid (B) Butyric acid (C) Valeric acid (D) Phthalic acid  Which one of the following is a typical transition metal:  (A) Sc (B) V (C) Ra (D) Co  Which of the following sulphates is not water:  (A) Sodium sulphate (B) Potassium sulphate  (C) Zinc sulphate (D) Barium sulphate  (C) Zinc sulphate (D) Barium sulphate  12 Linear shape is associated with which set of hybrid orbitals:  (A) sp (B) sp² (C) sp³ (D) dsp²  13 Which halogen occurs in a positive oxidation state:  (A) Fluorine (B) Chlorine (C) Bromine (D) Iodine  14 The electrophile in aromatic sulphonation is:  (A) H <sub>2</sub> SO <sub>4</sub> (B) HSO <sub>4</sub> (C) SO <sub>3</sub> (D) SO <sub>3</sub> <sup>+</sup> 15 Laughing gas is chemically:  (A) NO (B) N <sub>2</sub> O (C) NO <sub>2</sub> (D) N <sub>2</sub> O <sub>5</sub> 16 The carbon atom of a carboxyl group is hybridized:  (A) sp (B) sp² (C) sp³ (D) dsp²	8					
Which of the following is not a fatty acid  (A) Propanoic acid (B) Butyric acid (C) Valeric acid (D) Phthalic acid  Which one of the following is a typical transition metal:  (A) Sc (B) (C) Ra (D) Co  Which of the following sulphates is not stated at water:  (A) Sodium sulphate (B) Potassium sulphate  (C) Zinc sulphate (D) Barium sulphate  (C) Zinc sulphate (D) Barium sulphate  12 Linear shape is associated with which set of hybrid orbitals:  (A) sp (B) sp <sup>2</sup> (C) sp <sup>3</sup> (D) dsp <sup>2</sup> 13 Which halogen occurs in a positive oxidation state:  (A) Fluorine (B) Chlorine (C) Bromine (D) Iodine  14 The electrophile in aromatic sulphonation is:  (A) H <sub>2</sub> SO <sub>4</sub> (B) HSO <sub>4</sub> (C) SO <sub>3</sub> (D) SO <sub>3</sub> <sup>+</sup> 15 Laughing gas is chemically:  (A) NO (B) N <sub>2</sub> O (C) NO <sub>2</sub> (D) N <sub>2</sub> O <sub>5</sub> 16 The carbon atom of a carboxyl group is hybridized:  (A) sp (B) sp <sup>2</sup> (C) sp <sup>3</sup> (D) dsp <sup>2</sup>		(A) E1 and E2 (B)	E2 and Sy 2	(c) $S_N 1$ and $S_N 2$	$(D)$ E1 and $S_{W1}$	
Which one of the following is a typical transition metal:  (A) Sc (B) Y (C) Ra (D) Co  11 Which of the following sulphates is not carable a water:  (A) Sodium sulphate (B) Potassium sulphate (C) Zinc sulphate (D) Barium sulphate (C) Zinc sulphate (D) Barium sulphate  12 Linear shape is associated with which set of hybrid orbitals:  (A) sp (B) sp <sup>2</sup> (C) sp <sup>3</sup> (D) dsp <sup>2</sup> 13 Which halogen occurs in a positive oxidation state:  (A) Fluorine (B) Chlorine (C) Bromine (D) Iodine  14 The electrophile in aromatic sulphonation is:  (A) H <sub>2</sub> SO <sub>4</sub> (B) HSO <sub>4</sub> (C) SO <sub>3</sub> (D) SO <sub>3</sub> <sup>+</sup> 15 Laughing gas is chemically:  (A) NO (B) N <sub>2</sub> O (C) NO <sub>2</sub> (D) N <sub>2</sub> O <sub>5</sub> 16 The carbon atom of a carboxyl group is hybridized:  (A) sp (B) sp <sup>2</sup> (C) sp <sup>3</sup> (D) dsp <sup>2</sup>	9	Which of the following is no	t a fatty acid :	N N	( )	
Which one of the following is a typical transition metal:  (A) Sc (B) V (C) Ra (D) Co  Which of the following sulphates is not water:  (A) Sodium sulphate (B) Potassium sulphate (C) Zinc sulphate (D) Barium sulphate  Linear shape is associated with which set of hybrid orbitals:  (A) sp (B) sp <sup>2</sup> (C) sp <sup>3</sup> (D) dsp <sup>2</sup> Which halogen occurs in a positive oxidation state:  (A) Fluorine (B) Chlorine (C) Bromine (D) Iodine  The electrophile in aromatic sulphonation is:  (A) H <sub>2</sub> SO <sub>4</sub> (B) HSO <sub>4</sub> (C) SO <sub>3</sub> (D) SO <sub>3</sub> <sup>+</sup> Laughing gas is chemically:  (A) NO (B) N <sub>2</sub> O (C) NO <sub>2</sub> (D) N <sub>2</sub> O <sub>5</sub> The carbon atom of a carboxyl group is hybridized:  (A) sp (B) sp <sup>2</sup> (C) sp <sup>3</sup> (D) dsp <sup>2</sup>		(A) Propanoic acid (B	Butyric acid	(C) Valeric acid	(D) Phthalic acid	
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(C) Zinc sulphate (D) Barium sulphate  12 Linear shape is associated with which set of hybrid orbitals:  (A) sp (B) sp <sup>2</sup> (C) sp <sup>3</sup> (D) dsp <sup>2</sup> 13 Which halogen occurs in a positive oxidation state:  (A) Fluorine (B) Chlorine (C) Bromine (D) Iodine  14 The electrophile in aromatic sulphonation is:  (A) H <sub>2</sub> SO <sub>4</sub> (B) HSO <sub>4</sub> (C) SO <sub>3</sub> (D) SO <sub>3</sub> <sup>+</sup> 15 Laughing gas is chemically:  (A) NO (B) N <sub>2</sub> O (C) NO <sub>2</sub> (D) N <sub>2</sub> O <sub>5</sub> 16 The carbon atom of a carboxyl group is hybridized:  (A) sp (B) sp <sup>2</sup> (C) sp <sup>3</sup> (D) dsp <sup>2</sup>	11	Which of the following sulphates is not water :				
Linear shape is associated with which set of hybrid orbitals:  (A) $sp$ (B) $sp^2$ (C) $sp^3$ (D) $dsp^2$ 13 Which halogen occurs in a positive oxidation state:  (A) Fluorine (B) Chlorine (C) Bromine (D) Iodine  14 The electrophile in aromatic sulphonation is:  (A) $H_2SO_4$ (B) $HSO_4$ (C) $SO_3$ (D) $SO_3^+$ 15 Laughing gas is chemically:  (A) $NO$ (B) $N_2O$ (C) $NO_2$ (D) $N_2O_5$ 16 The carbon atom of a carboxyl group is hybridized:  (A) $sp$ (B) $sp^2$ (C) $sp^3$ (D) $dsp^2$		(A) Sodium sulphate (B) Potassium sulphate				
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(A) NO (B) $N_2O$ (C) $NO_2$ (D) $N_2O_5$ 16 The carbon atom of a carboxyl group is hybridized:  (A) $sp$ (B) $sp^2$ (C) $sp^3$ (D) $dsp^2$				$(C)$ $SO_3$	(D) $SO_3^+$	
16 The carbon atom of a carboxyl group is hybridized:  (A) $sp$ (B) $sp^2$ (C) $sp^3$ (D) $dsp^2$	15	Daughing gas is chemically :				
The carbon atom of a carboxyl group is hybridized:  (A) $sp$ (B) $sp^2$ (C) $sp^3$ (D) $dsp^2$		(A) NO (B) I	$V_2O$ (C	$NO_2$	(D) $N_2O_5$	
(b) op	16					
(b) op		(A) $sp$ (B)	$sp^2$	(C) $sp^3$	(D) $dsn^2$	
	17	. ,		fibre :	(D) usp	

(B) Oxalic acid

(A) Formic acid

(C) Carbonic acid (D) Acetic acid 191-221-I-(Objective Type)- 9500 (8483)

Roll No (To be filled in by the candidate) (Academic Sessions 2017 - 2019 to 2019 - 2021) **CHEMISTRY** 221-(INTER PART - II) Time Allowed: 2.40 hours PAPER - II (Essay Type) GROUP - I Maximum Marks: 68 SECTION - I 2. Write short answers to any EIGHT (8) questions : 16 (i) Why the ionic radii of negative ions are larger than the size of their parent atoms? (ii) Why the graphite is a good conductor? (iii) Complete and balance the equations : (a)  $LiNO_3 \xrightarrow{Heat}$  (b)  $NaNO_3 \xrightarrow{Heat}$ (iv) Why the aqueous solution of  $Na_2CO_3$  is alkaline in nature? (v) Give the chemical formulae of: (a) Kaolin (b) Feldspar (vi) Give the four differences of boron from other elements of group IIIA. (vii) Give four uses of borax. (viii) Give four similarities of sulphur and oxygen. (ix) Give four uses of sulphuric acid. (x) Mention any four qualities of a good fertilizer. (xi) Give the composition of a good Portland cement. (xii) Define the term 'setting of cement'. Also describe reactions taking place in first 24-hours? 3. Write short answers to any EIGHT (8) questions: 16 (i) Oxidizing power of halogen depends upon which factors. (ii) What do you know about disproportionation reactions? Give example. (iii) Give two uses of bleaching powder. (iv) What are interstitial compounds? (v) What is anode coating? (vi) Give four examples of ortho-para directing groups. (vii) Discuss catalytic oxidation of benzene. (viii) What is iodoform test? Give its uses. (ix) What do you know about silver mirror test? (x) How would you prepare carboxylic acids from Grignard Reagents? (xi) How would you prepare acid anhydride from acetic acid? (xii) Why first four members of aliphatic acids are soluble in water? 12 4. Write short answers to any SIX (6) questions : (i) What are homocyclic and heterocyclic compounds? Give one example of each. (ii) Write the structural formulas of two possible isomers of  $C_4H_{10}$ . (iii) How is methane converted to ethane? (iv) Ozonolysis of alkene is used to locate the position of double bond, comment. (v) Why is sigma bond inert? (Turn Over)