



WEEKLY TEST

DISCUSSION

TOPIC:-

**ELECTRONEGATIVITY,
INDUCTIVE EFFECT,
RESONANCE EFFECT,
HYPERCONJUGATION,
HYBRIDISATION**

**TIME:-
11:00 A.M**

EVERY SUNDAY

ORGANIC CHEMISTRY

IMPORTANT FOR GPAT 2025-26

VIDEO DEKHNE KE LIYE BANNER PAR CLICK KARE



 **TEST NO-13**

WEEKLY TEST GPAT 2025

NEXT DAY :- TEST VIDEO SOLUTION ON YOUTUBE

SUBJECT - ORGANIC CHEMISTRY
TOPIC - ELECTRONEGATIVITY,INDUCTIVE EFFECT,RESONANCE EFFECT ,HYPERCONJUGATION,HYBRIDISATION

28th SEPTEMBER 2024 | EVERY SATURDAY 6-12 P.M



STEP-1



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STEP-2



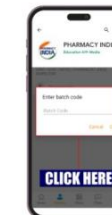
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STEP-3



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STEP-4



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PHARMA26

STEP-5



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जुड़िए PHARMACY INDIA के साथ.....

WHATSAPP & TELEGRAM SE JUDNE KE LIYE
ICONS PAR CLICK KARE





1. Which of the following is incorrect for periodic properties?

- (a) Electronegativity of $F > Cl$
- (b) Bond energy of $F_2 > Cl_2$
- (c) Electron affinity of $Cl > F$
- (d) F is more oxidizing than Cl





1. Which of the following is incorrect for periodic properties?

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- (b) Bond energy of $F_2 > Cl_2$
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2. Which of the following is a characteristic property of non-metals?

- (a) They form basic oxides.
- (b) They are reducing agents.
- (c) They are electronegative.
- (d) They form cations by electron gain.





2. Which of the following is a characteristic property of non-metals?

- (a) They form basic oxides.
- (b) They are reducing agents.
- (c) They are electronegative.**
- (d) They form cations by electron gain.





3. On going from right to left in a period, the electronegativity

- (a) decreases
- (b) increases
- (c) decreases first, then increases
- (d) remains unchanged





3. On going from right to left in a period, the electronegativity

(a) decreases

(b) increases

(c) decreases first, then increases

(d) remains unchanged





4. Which among the following is the most electronegative element?

- (a) C
- (b) Mg
- (c) S
- (d) O





4. Which among the following is the most electronegative element?

- (a) C
- (b) Mg
- (c) S
- (d) O





5. Which of the following is the correct order of elements with increasing electronegativity?

- (a) $P < S < N < O$**
- (b) $S < P < N < O$**
- (c) $N < O < P < S$**
- (d) $N < P < S < O$**





5. Which of the following is the correct order of elements with increasing electronegativity?

(a) $P < S < N < O$

(b) $S < P < N < O$

(c) $N < O < P < S$

(d) $N < P < S < O$





6. Going down in the group from F to I, the electronegativity

- (a) decreases
- (b) increases
- (c) decreases, then increases
- (d) increases, then decreases





6. Going down in the group from F to I, the electronegativity

- (a) decreases**
- (b) increases**
- (c) decreases, then increases**
- (d) increases, then decreases**





7. Electronegativity is an ability to

- (a) attract protons
- (b) attract electrons
- (c) repel protons
- (d) repel electrons





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- (a) attract protons
- (b) attract electrons**
- (c) repel protons
- (d) repel electrons





8. The property of the halogens to attract the bonded electrons of the covalent bond is known as

- (a) electron affinity**
- (b) ionisation potential**
- (c) electronic attraction**
- (d) electronegativity**





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- (a) electron affinity
- (b) ionisation potential
- (c) electronic attraction
- (d) electronegativity**





9. Which among the following is the most electronegative element?

- (a) B**
- (b) F**
- (c) O**
- (d) C**





9. Which among the following is the most electronegative element?

- (a) B
- (b) F
- (c) O
- (d) C





10. Which of the following elements have electronegativity less than 3 on Pauling's scale?

- (a) F
- (b) Cl
- (c) C
- (d) O





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- (b) Cl
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11. Which of the following is a permanent electron displacement effect?

- a) Inductomeric
- b) Electromeric
- c) Inductive
- d) All of the mentioned





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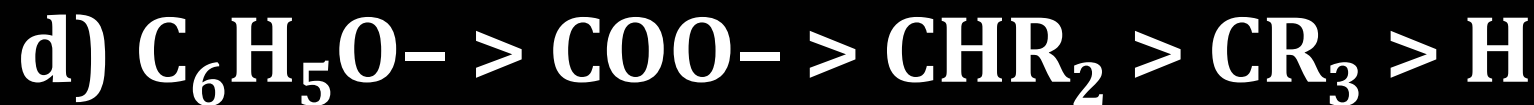
12. Arrange the following groups in the order of decreasing (+I) effect.

- a) $\text{C}_6\text{H}_5\text{O}- > \text{COO}- > \text{CR}_3 > \text{CHR}_2 > \text{H}$
- b) $\text{C}_6\text{H}_5\text{O}- > \text{H} > \text{CR}_3 > \text{CHR}_2 > \text{COO}-$
- c) $\text{CR}_3 > \text{C}_6\text{H}_5\text{O}- > \text{H} > \text{COO}- > \text{CHR}_2$
- d) $\text{C}_6\text{H}_5\text{O}- > \text{COO}- > \text{CHR}_2 > \text{CR}_3 > \text{H}$





12. Arrange the following groups in the order of decreasing (+I) effect.





13. Arrange the following groups in the order of decreasing (-I) effect.

- a) $\text{CN} > \text{F} > \text{Br} > \text{Cl} > \text{COOH} > \text{I} > \text{H}$
- b) $\text{COOH} > \text{CN} > \text{F} > \text{Br} > \text{Cl} > \text{I} > \text{H}$
- c) $\text{H} > \text{COOH} > \text{CN} > \text{I} > \text{Cl} > \text{F} > \text{Cl}$
- d) $\text{CN} > \text{COOH} > \text{F} > \text{Cl} > \text{Br} > \text{I} > \text{H}$





13. Arrange the following groups in the order of decreasing (-I) effect.

a) $\text{CN} > \text{F} > \text{Br} > \text{Cl} > \text{COOH} > \text{I} > \text{H}$

b) $\text{COOH} > \text{CN} > \text{F} > \text{Br} > \text{Cl} > \text{I} > \text{H}$

c) $\text{H} > \text{COOH} > \text{CN} > \text{I} > \text{Cl} > \text{F} > \text{Cl}$

d) $\text{CN} > \text{COOH} > \text{F} > \text{Cl} > \text{Br} > \text{I} > \text{H}$





14. Which of the following is an application of inductive effect?

- a) Bond length
- b) Dipole moment
- c) Strength of carboxylic acids
- d) All of the mentioned





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- a) Bond length
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15. Select correct statement about I effect?

- a) I effect transfers electrons from one carbon atom to another.
- b) I effect is the polarisation of σ bond electrons.
- c) I effect creates net charge in the molecule.
- d) I effect is distance independent.





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16. Which of the following group shows +I effect :

- a) -Br
- b) -COOH
- c) -OR
- d) -COO-





16. Which of the following group shows +I effect :

- a) -Br
- b) -COOH
- c) -OR
- d) -COO-





17. Which of the following alkyl group has the maximum +I effect ?

- a) $(\text{CH}_3)_2\text{CH}-$
- b) $(\text{CH}_3)_3\text{C}-$
- c) CH_3CH_2-
- d) CH_3-





17. Which of the following alkyl group has the maximum +I effect ?





18. Decreasing -I effect of given groups is :

(i) -CN (ii) -NO₂ (iii) -NH₂ (iv) -F

a) iii > ii > i > iv

b) ii > iii > iv > i

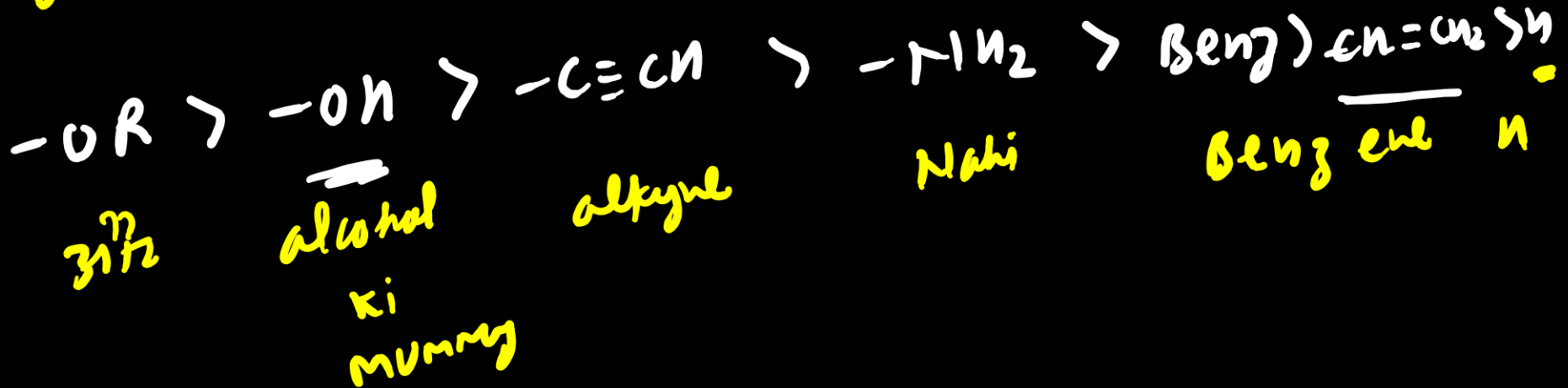
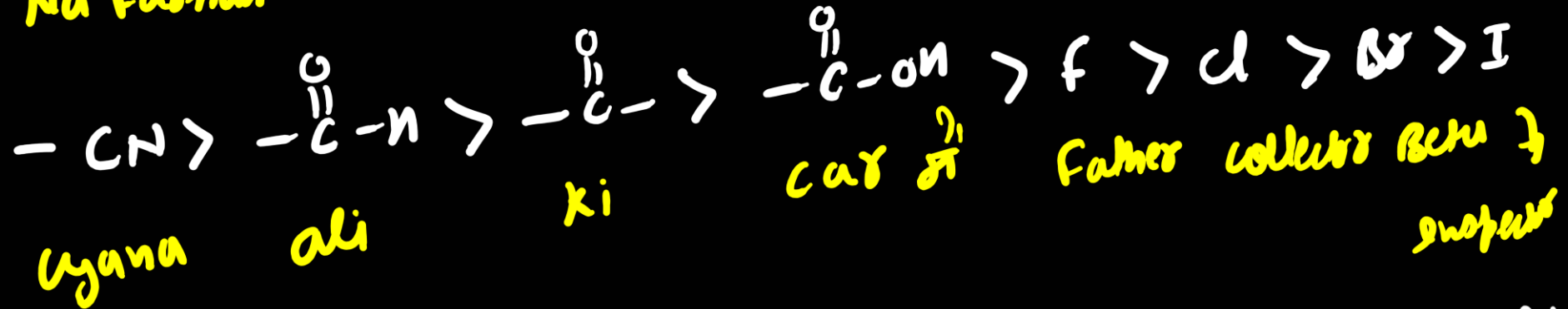
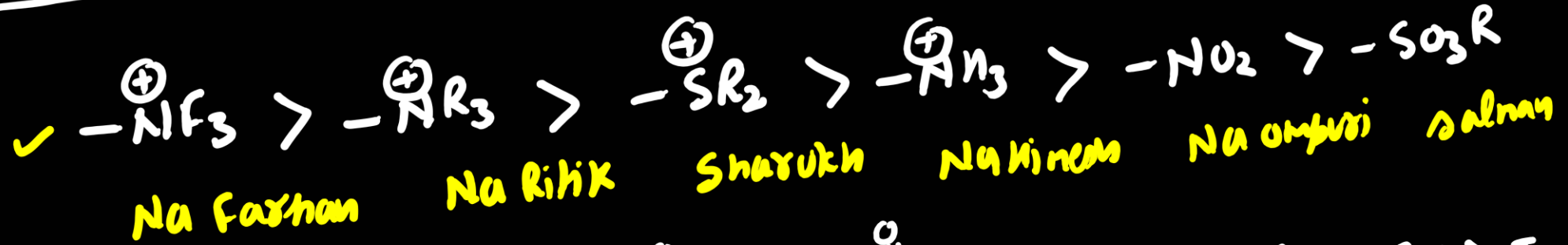
c) iii > ii > iv > i

d) ii > i > iv > iii





-I effect





18. Decreasing -I effect of given groups is :

(i) -CN (ii) -NO₂ (iii) -NH₂ (iv) -F

a) iii > ii > i > iv

b) ii > iii > iv > i

c) iii > ii > iv > i

d) ii > i > iv > iii





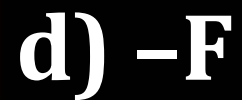
19. Which of the following is the strongest -I group :

- a) $-\overset{+}{\text{N}}(\text{CH}_3)_3$
- b) $-\overset{+}{\text{N}}\text{H}_3$
- c) $-\overset{+}{\text{S}}(\text{CH}_3)_2$
- d) $-\text{F}$





19. Which of the following is the strongest -I group :





20. Resonance is delocalisation of :

- a) π electrons
- b) σ electrons
- c) σ - π electrons
- d) None





20. Resonance is delocalisation of :

- a) π electrons
- b) σ electrons
- c) σ - π electrons
- d) None



21. Resonance involves :

- a) Delocalization of π -electrons along a conjugated system.
- b) Delocalization of lone pair along a conjugated system.
- c) Delocalization of negative charge along a conjugated system.
- d) All are correct.





21. Resonance involves :

- a) Delocalization of π -electrons along a conjugated system.
- b) Delocalization of lone pair along a conjugated system.
- c) Delocalization of negative charge along a conjugated system.
- d) All are correct.





22. During delocalization, which statement is incorrect :

- a) Net charge remains same
- b) Number of paired electrons remain same
- c) Number of unpaired electrons remain same
- d) Energy of resonating structures always remains same





22. During delocalization, which statement is incorrect :

- a) Net charge remains same
- b) Number of paired electrons remain same
- c) Number of unpaired electrons remain same
- d) Energy of resonating structures always remains same





23. Resonance structure of the molecule does not have

- a) higher energy than their hybrid structure.
- b) identical arrangement of atoms.
- c) the same number of paired electrons.
- d) always equal contribution to the resonance hybrid.





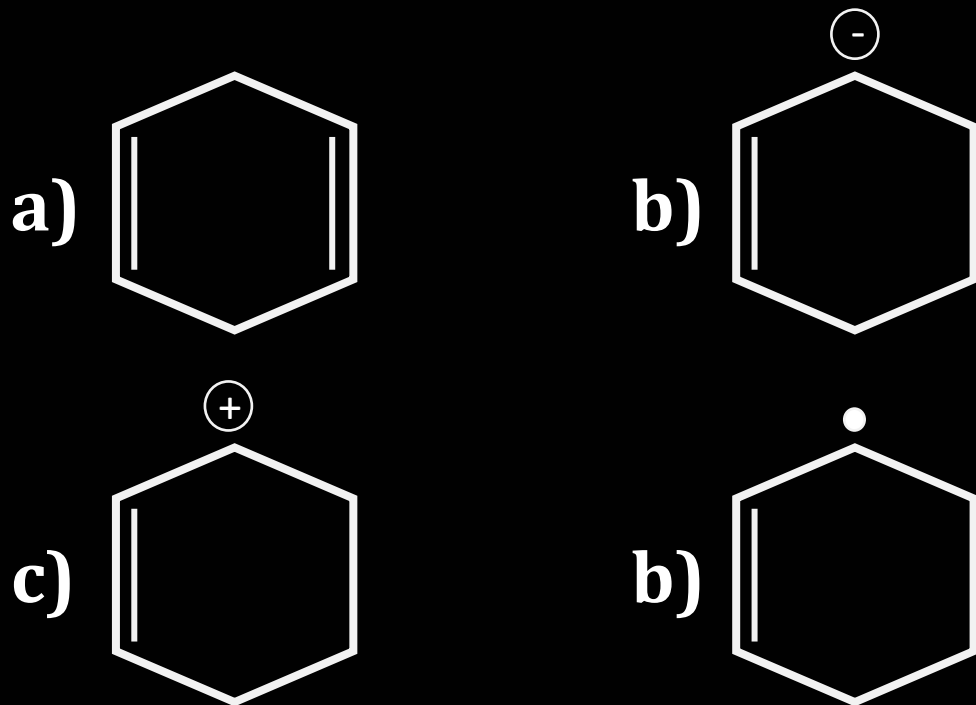
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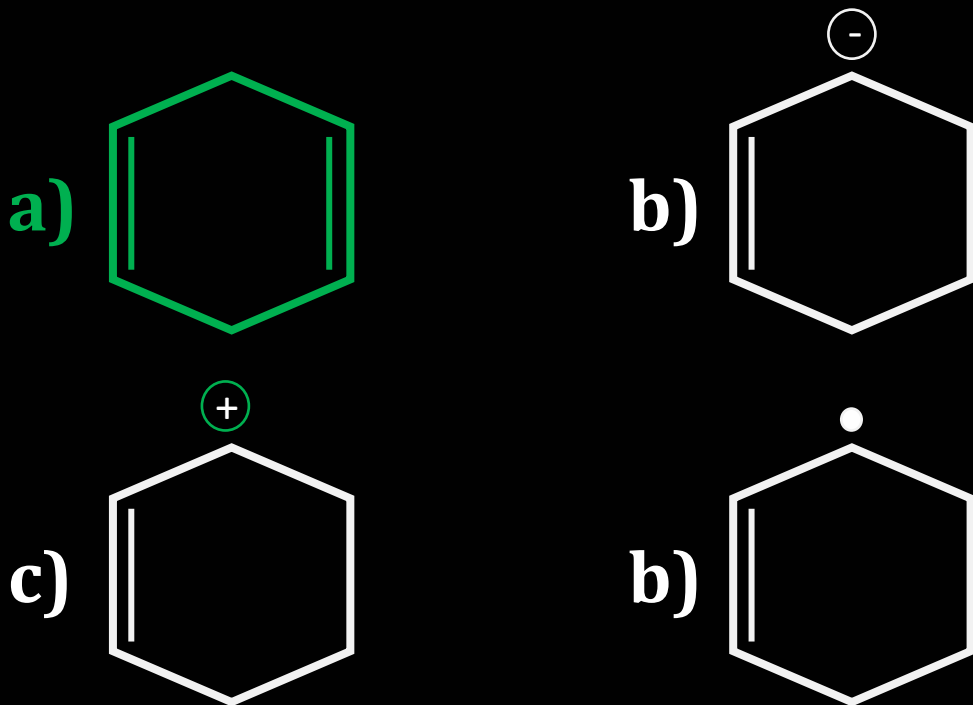


24. Which of the following species can not show resonance?



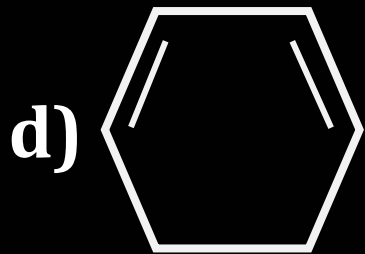
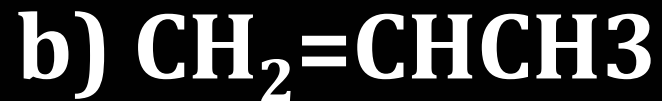
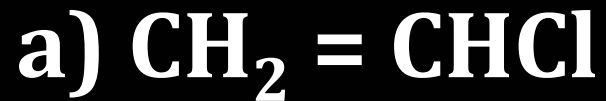


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26. Which of the following have conjugate system?





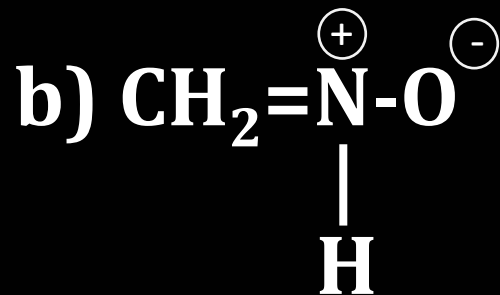
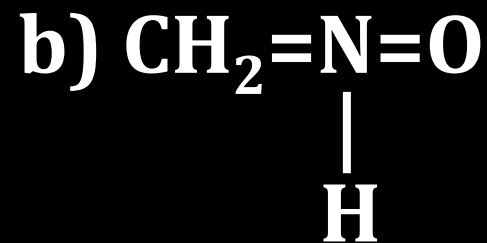
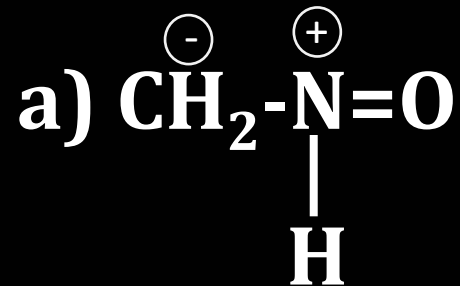
26. Which does not have conjugate system?

- a) $\text{CH}_2 = \text{CHCl}$
- b) $\text{CH}_2 = \text{CHCH}_3$
- c) $\text{CH}_3\text{CH} = \text{CH}_2$





27. Which of the following is not acceptable as resonating structure:

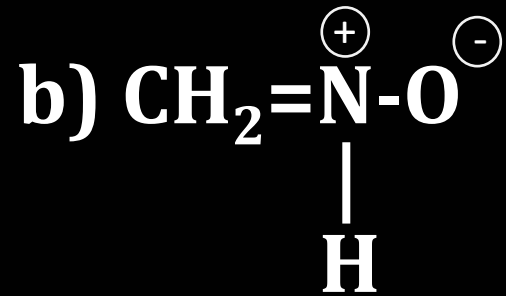
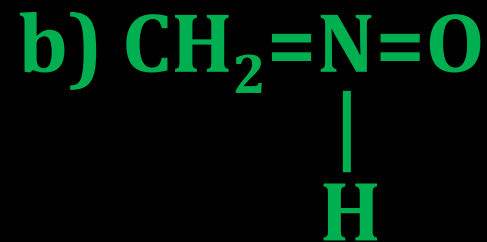
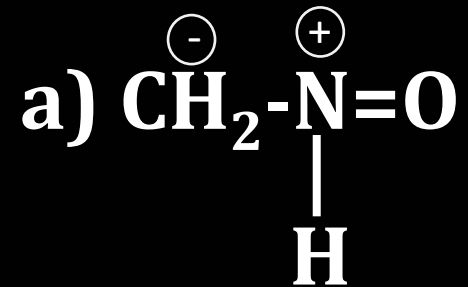


d) None of these





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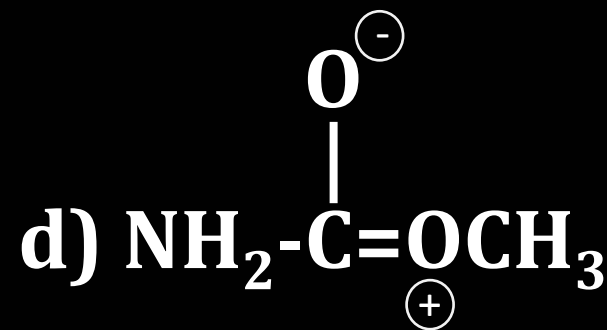
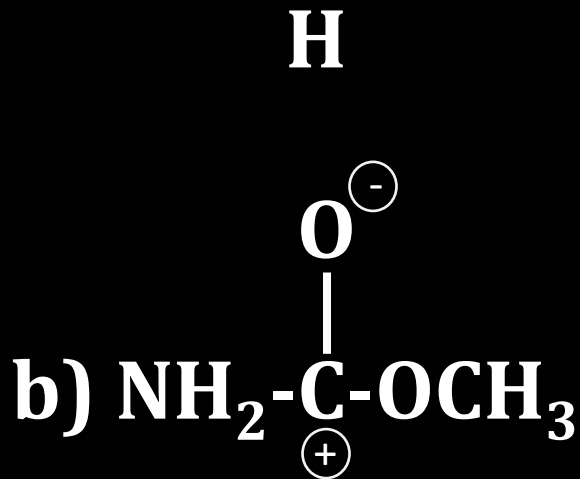
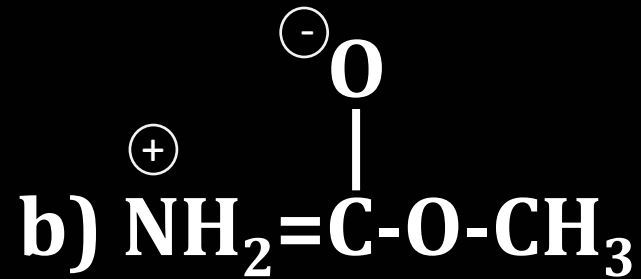
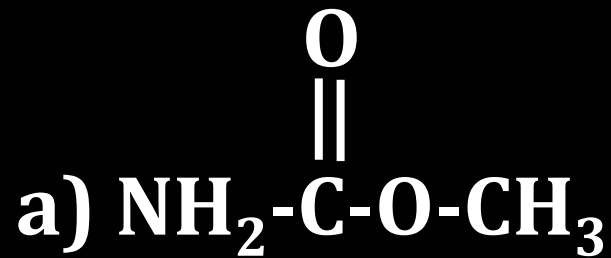


d) None of these



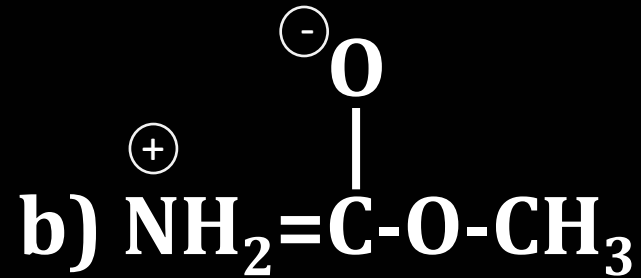
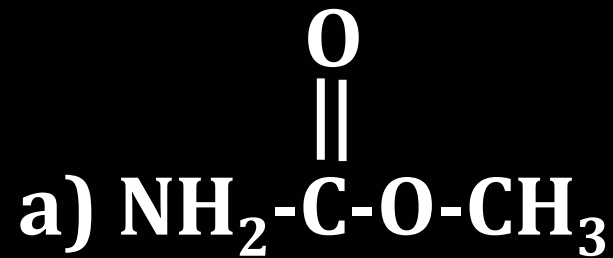


28. Which one of the following is least stable resonating structure?

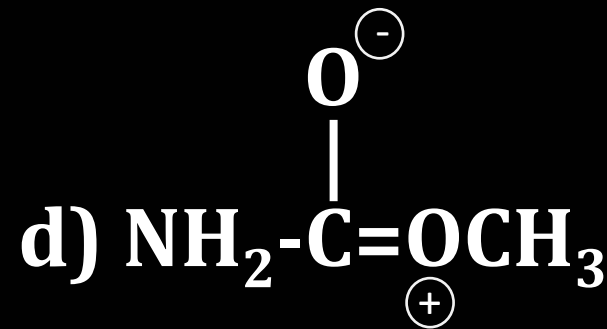
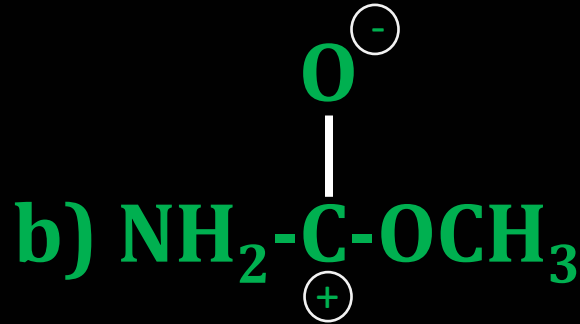




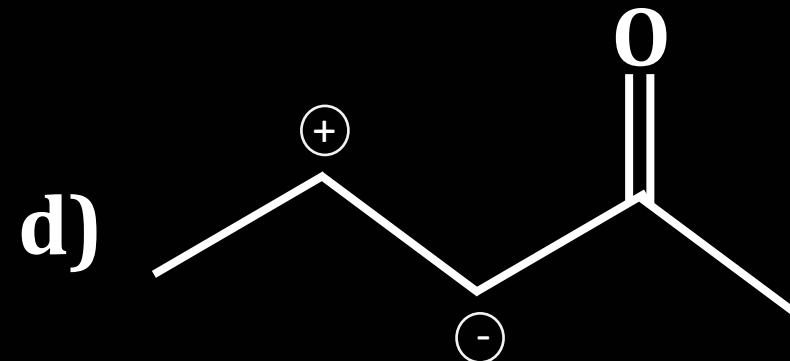
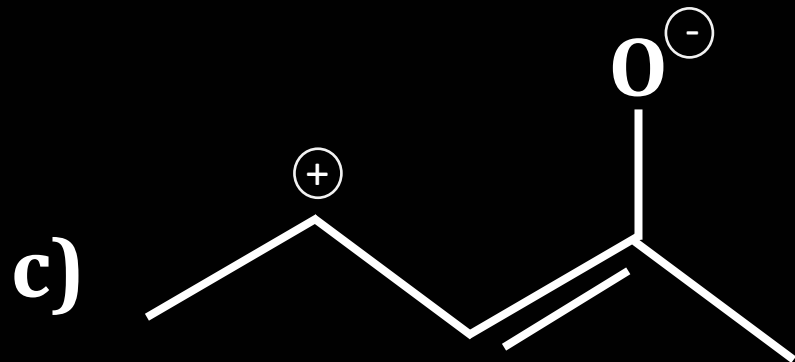
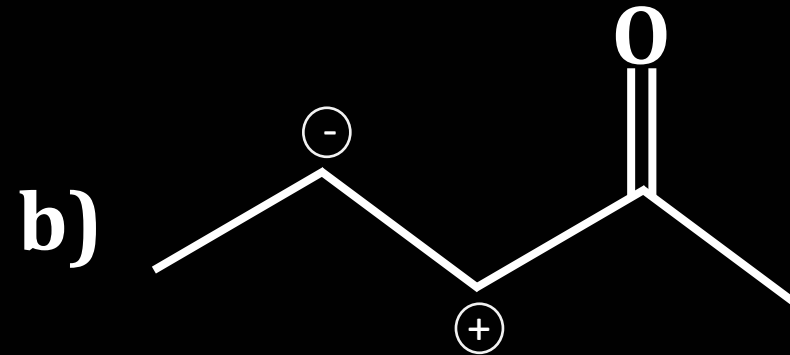
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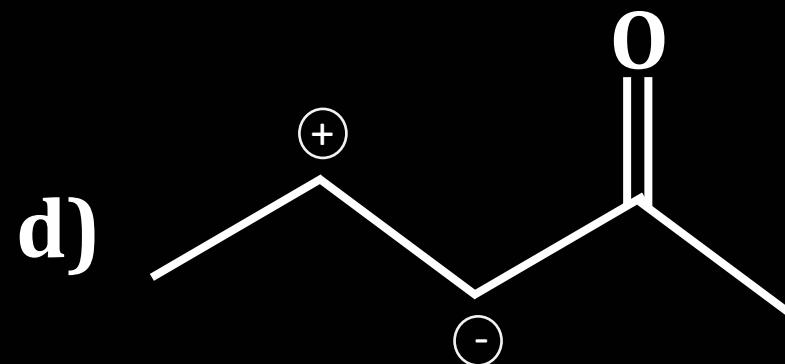
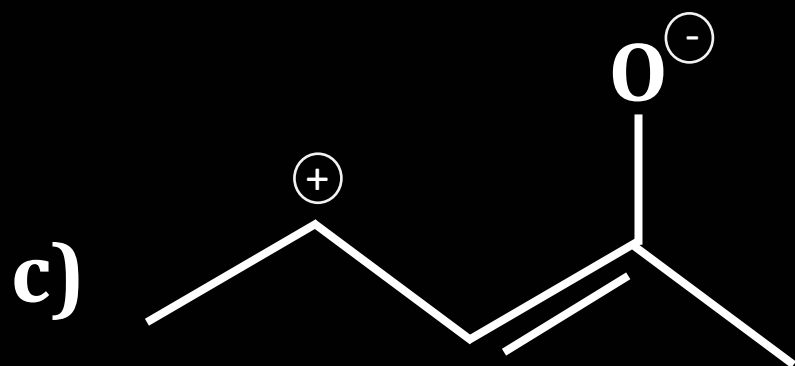
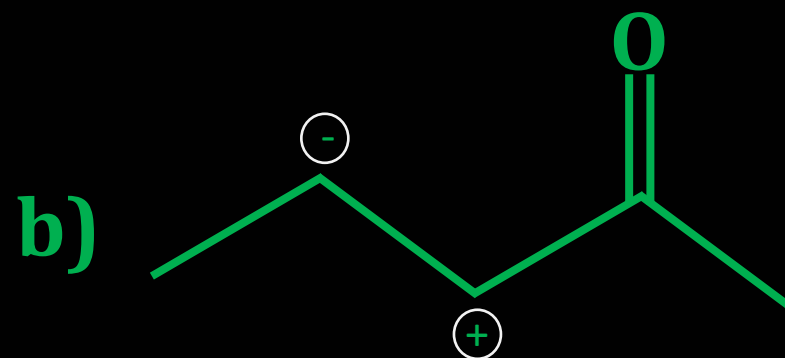
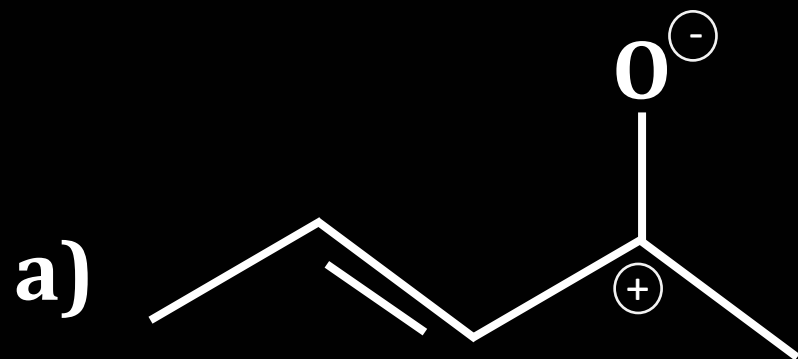
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29. Which of the following resonating structure is the least contributing structure?



29. Which of the following resonating structure is the least contributing structure?





30. In hyperconjugation there is overlap between :

- a) p- and π -orbitals
- b) 2π -orbitals
- c) d-and π -orbital
- d) σ -and p-orbitals





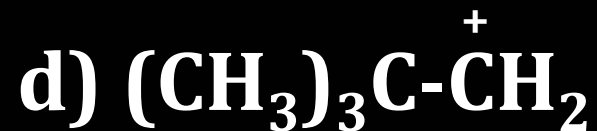
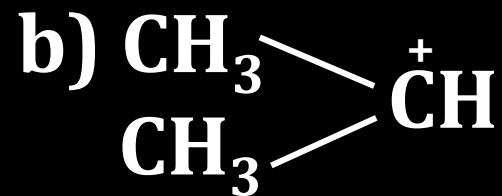
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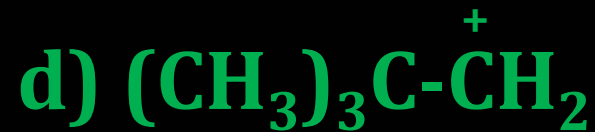
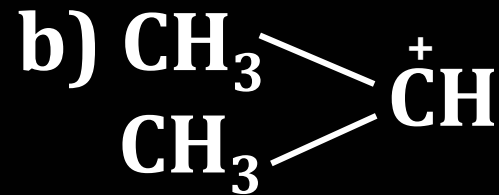


31. Which of the following cannot exhibit hyperconjugation -





31. Which of the following cannot exhibit hyperconjugation -





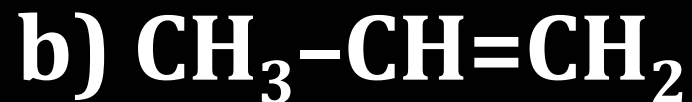
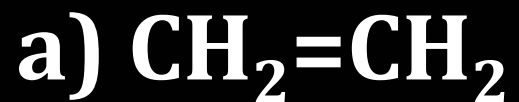
32. Which of the following alkenes will show maximum number of hyperconjugation forms ?

- a) $\text{CH}_2=\text{CH}_2$
- b) $\text{CH}_3-\text{CH}=\text{CH}_2$
- c) $\text{CH}_3-\text{CH}_2-\text{CH}=\text{CH}_2$
- d) $(\text{CH}_3)_2-\text{C}=\text{CH}_2$





32. Which of the following alkenes will show maximum number of hyperconjugation forms ?

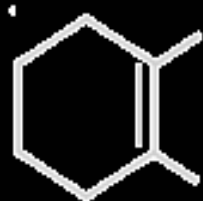




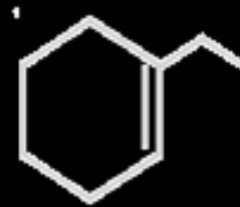
33. Arrange the stability of following



I



II



III

- a) I < II < III
- b) II < I < III
- c) I < III < II
- d) II < III < I

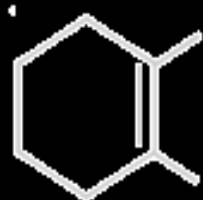




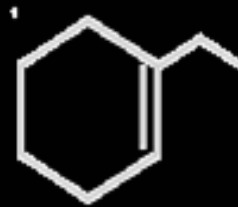
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I



II



III

a) I < II < III

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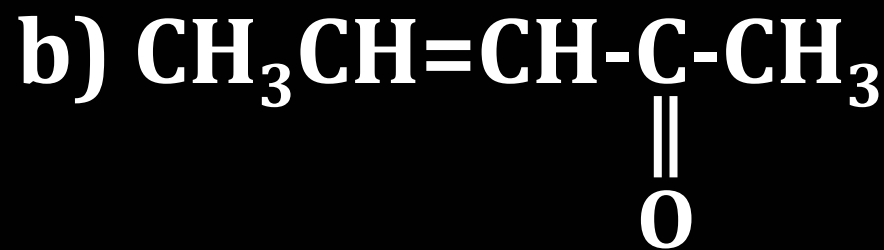
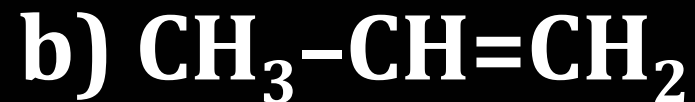
c) I < III < II

d) II < III < I



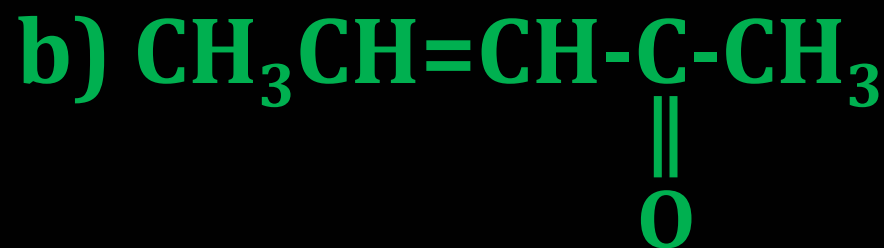
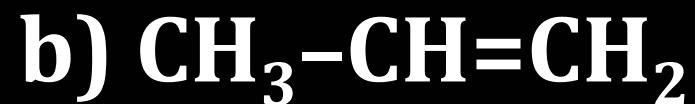


34. Which one of the following has inductive, mesomeric and hyperconjugation effect ?





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35. Which of the following group has the maximum hyperconjugation effect when attached to benzene ring ?

- a) CH_3-
- b) CH_3CH_2-
- c) $(\text{CH}_3)_2\text{CH}-$
- d) $(\text{CH}_3)_3\text{C}-$





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36. The hybridization of the central carbon in $\text{CH}_3\text{C}\equiv\text{N}$ and the bond angle C-CN are

- a) sp^2 , 180°
- b) sp , 180°
- c) sp^2 , 120°
- d) sp^3 , 109°





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a) sp^2 , 180°

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d) sp^3 , 109°





37. What are the hybridizations of carbons 1 and 2 respectively in the following structure?



- a) sp^3 and sp^2
- b) sp^2 and sp^3
- c) sp^3 and sp
- d) sp^2 and sp^2





37. What are the hybridizations of carbons 1 and 2 respectively in the following structure?



- a) sp^3 and sp^2
- b) sp^2 and sp^3
- c) sp^3 and sp
- d) sp^2 and sp^2





38. Find the Pair with sp^2 Hybridization of the Central Molecule.

- (a) NH_3 and NO_2^-
- (b) BF_3 and NH_2^-
- (c) BF_3 and NO_2^-
- (d) NH_2^- and H_2O





38. Find the Pair with sp^2 Hybridization of the Central Molecule.

- (a) NH_3 and NO_2^-
- (b) BF_3 and NH_2^-
- (c) BF_3 and NO_2^-
- (d) NH_2^- and H_2O





39. The hybridization of orbitals of N atom in NO_3^- , NO_2^+ and NH_4^+ are respectively

a) sp^2 , sp^3 , sp

b) sp , sp^2 , sp^3

c) sp^2 , sp , sp^3

d) sp , sp^3 , sp^2





39. The hybridization of orbitals of N atom in NO_3^- , NO_2^+ and NH_4^+ are respectively

a) sp^2 , sp^3 , sp

b) sp , sp^2 , sp^3

c) sp^2 , sp , sp^3

d) sp , sp^3 , sp^2





40. The number of types of bonds between two carbon atoms in calcium carbide is

- a) Two sigma, two pi
- b) One sigma, two pi
- c) One sigma, one pi
- d) Two sigma, one pi





40. The number of types of bonds between two carbon atoms in calcium carbide is

- a) Two sigma, two pi
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