Arjuna JEE 2.0 (2024)

GOC

DPP-01

1. The inductive effect of the groups: $-NH_3^{\oplus}$; –D; $-CO_2^{\ominus}$; –COOH are respectively

(1) –I, +I, +I, –I
(2) –I, –I, –I, +I
(3) +I, No effect, –I, –I
(4) +I, –I, –I, –I

2. Which of the following belongs to + I group?

(1) –OMe (2) $-\overset{+}{N}H_3$

(3) $-\overset{O}{\overset{\|}{C}}-\bar{O}$ (4) –OH

3. Choose the correct statement

(1) I effect operates in both σ and π bonds
(2) I effect creates net charge in molecule
(3) I effect transfers electron from one carbon to another
(4) I effect creates partial charges and it is distance dependent

4. The most stable carbocation among the following is:

(1) $H_3\overset{+}{C}$

(2) $H_2\overset{+}{C}CH_2-OCH_3$

(3) $H_3C-\overset{+}{\underset{\displaystyle CH_3}{\underset{|}{C}}}-CH_2-CH_3$

(4) $H_3C-\overset{+}{\underset{\displaystyle CH_3}{\underset{|}{C}}}-CH_2-OCH_3$

5. Order of stability of given free radical is:

$H_3C-\underset{(I)}{\dot{C}H_2}$ $H_3C-\underset{(II)}{\dot{C}H}-CH_3$

$H_3C-\underset{\displaystyle CH_3}{\underset{|}{\dot{C}}}-CH_2-CH_3$ (III)

(1) III > I > II (2) I > II > III
(3) II > I > III (4) III > II > I

6. The –I effect is shown by:

(1) –COOH (2) $-CH_3$
(3) $-CH_2CH_3$ (4) $-CHR_2$

7. The increasing order of +ve I-effect shown by H, CH_3, C_2H_5 and C_3H_7 is:

(1) $H < CH_3 < C_2H_5 < C_3H_7$
(2) $H > CH_3 > C_2H_5 > C_3H_7$
(3) $H < C_2H_5 < CH_3 < C_3H_7$
(4) None of the above

8. Inductive effect refers to –

(1) electron displacement along a carbon chain
(2) Complete transfer of one of the shared pair of electrons to one of the atoms joined by a double bond
(3) Complete transfer of electron with the help of conjugation
(4) None of the above

9. Decreasing order of –I effect of the triad $[-NO_2, -\overset{\oplus}{N}H_3, -CN]$ is

(1) $-\overset{\oplus}{N}H_3 > -NO_2 > -CN$
(2) $-\overset{\oplus}{N}H_3 > -CN > -NO_2$
(3) $-CN > -NO_2 > -\overset{\oplus}{N}H_3$
(4) $-NO_2 > -CN > -\overset{\oplus}{N}H_3$

10. Which is the least stable carbocation?

(I) $CH_3CH_2\overset{+}{C}H_2$

(II) $CH_3\overset{+}{C}HCH_3$

(III) $(CH_3)_3\overset{+}{C}$

(IV) $(CH_3)_2HC\overset{+}{C}H_2$

(1) I (2) II
(3) III (4) IV

11. Amongst the given cations, the most stable carbonium ion is

(1) $\overset{+}{C}H_3$ (2) $(CH_3)_3\overset{+}{C}$

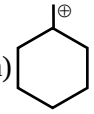
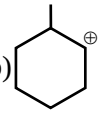
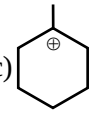
(3) $CH_3\overset{+}{C}H_2$ (4) $(CH_3)_2\overset{+}{C}H$

12. The least stable free radical is

(1) $CH_3\dot{C}H_2$ (2) $CH_3CH_2\dot{C}H_2$

(3) $(CH_3)_2\dot{C}H$ (4) $(CH_3)_3\dot{C}$

13. Which is the correct stability order of following intermediates:

(a)  (b)  (c) 

(1) a > b > c
(2) a > c > b
(3) c > b > a
(4) b > a > c

14. $\overset{\ominus}{C}H_3$ is less stable than

(1) $CH_3-\overset{\ominus}{C}H_2$

(2) $CH_3-\overset{\ominus}{C}H-CH_3$

(3) $\overset{\ominus}{C}H_2-NO_2$

(4) $CH_3-\overset{\ominus}{C}H-C_2H_5$

15. The correct order of stability of given carbanions will be

(I) $CH_3-\overset{\ominus}{C}H_2$

(II) $CH_2=\overset{\ominus}{C}H$

(III) $HC\equiv\overset{\ominus}{C}$

(1) I > II > III
(2) III > II > I
(3) I > III > II
(4) II > I > III

Note: Kindly find the Video Solution of DPPs Questions in the DPPs Section.

Answer Key

1.	(1)
2.	(3)
3.	(4)
4.	(3)
5.	(4)
6.	(1)
7.	(1)
8.	(1)
9.	(1)
10.	(4)
11.	(2)
12.	(2)
13.	(3)
14.	(3)
15.	(2)

PW Web/App - https://smart.link/7wwosivoicgd4

Library- https://smart.link/sdfez8ejd80if