

EXERCISE - I (Conceptual Questions)

Build Up Your Understanding

Attacking Reagent

1. Which of the following species is an electrophile

(1) RNH_2 (2) SO_3
(3) $\text{NO}_3^\ominus$ (4) ROH

CGC001

2. Which of the following acts as a nucleophile?

(1) $\text{NO}_2^\oplus$ (2) $:\text{CCl}_2$
(3) $\text{NH}_2^\ominus$ (4) $\text{CH}_3^\oplus$

CGC002

Reaction Intermediates

3. Which of the following contains three pair of electrons :

(1) Carbanion
(2) Carbocation
(3) Carbon free radical
(4) None

CGC003

4. Carbanion is a :-

(1) Base (2) Nucleophile
(3) Both the above (4) None

CGC004

I-Effect

5. $\text{CH}_3^\ominus$ is less stable than :-

(1) $\text{CH}_3-\text{CH}_2^\ominus$ (2) $\text{CH}_3-\text{CH}^\ominus-\text{CH}_3$
(3) $\text{CH}_2^\ominus-\text{NO}_2$ (4) $\text{CH}_3-\text{CH}^\ominus-\text{C}_2\text{H}_5$

CGC005

6. Decreasing order of -I effect of the triad

$[-\text{NO}_2, -\text{NH}_3^\oplus, -\text{CN}]$ is :-

(1) $-\text{NH}_3^\oplus > -\text{NO}_2 > -\text{CN}$
(2) $-\text{NH}_3^\oplus > -\text{CN} > -\text{NO}_2$
(3) $-\text{CN} > -\text{NO}_2 > -\text{NH}_3^\oplus$
(4) $-\text{NO}_2 > -\text{CN} > -\text{NH}_3^\oplus$

CGC006

7. $\text{CH}_3-\text{CH}^\oplus-\text{CH}_3$ is less stable than

(1) $\text{CH}_3-\text{C}^\oplus(\text{CH}_3)_2$ (2) $\text{CH}_3-\text{CH}_2^\oplus$

(3) $\text{CH}_3^\oplus$ (4) None of these

CGC007

8. Which of the following show + I-effect :-

(1) $-\text{OH}$ (2) $-\text{OCH}_3$ (3) $-\text{CH}_3$ (4) $-\text{Cl}$

CGC011

9. The correct order of stability of given carbanions will be :-

$\text{CH}_3-\text{CH}_2^\ominus$ (I) $\text{CH}_2=\text{CH}^\ominus$ (II) $\text{HC}\equiv\text{C}^\ominus$ (III)

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

CGC008

10. The strongest acid amongst the following compounds is ?

(1) $\text{CH}_3\text{CH}_2\text{CH}(\text{Cl})\text{CO}_2\text{H}$
(2) $\text{ClCH}_2\text{CH}_2\text{CH}_2\text{COOH}$
(3) CH_3COOH
(4) HCOOH

CGC012

11. Which of the following acids is stronger than acetic acid :-

(1) Propanoic acid
(2) HCOOH
(3) Butyric acid
(4) $(\text{CH}_3)_2\text{CHCOOH}$

CGC013

12. Which of the following acids have the lowest pK_a value :-

(1) $\text{CH}_3-\text{CH}(\text{Cl})-\text{COOH}$ (2) $\text{Cl}-\text{CH}_2-\text{CH}_2-\text{COOH}$
(3) CCl_3COOH (4) CHCl_2COOH

CGC014

13. Which of the following has maximum pK_a :-

- (1) CH_2FCOOH (2) CH_2ClCOOH
(3) CH_3COOH (4) HCOOH

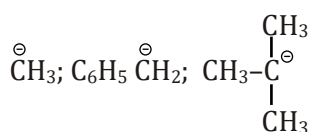
CGC010

14. Which is most basic among the following :-

- (1) CH_3NH_2 (2) $\text{CH}_3\text{CH}_2\text{NH}_2$
(3) NH_3 (4) $(\text{CH}_3)_2\text{CHNH}_2$

CGC009

15. Select the correct option for stability of following carbanions :



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

CGC028

R- or M-Effect

16. Mesomeric effect is due to :-

- (1) Delocalization of σe^-
(2) Delocalization of πe^-
(3) Migration of H-atom
(4) Migration of proton

CGC024

17. The stabilization due to resonance is maximum in



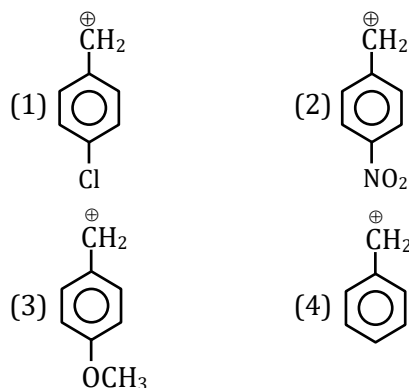
CGC018

18. The oxygen atom in phenol -

- (1) Exhibits only inductive effect
(2) Exhibits only resonance effect
(3) Has more dominating resonance effect than inductive effect
(4) Has more dominating inductive effect than resonance effect

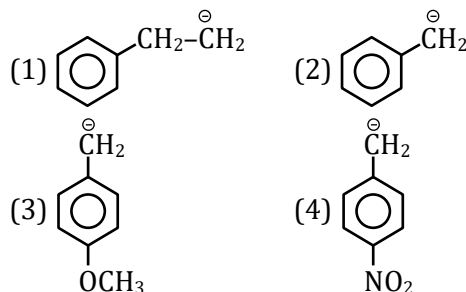
CGC023

19. Most stable carbocation is :-



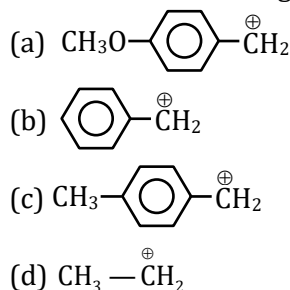
CGC015

20. The most stable carbanion among the following is



CGC022

21. Consider the following carbocations

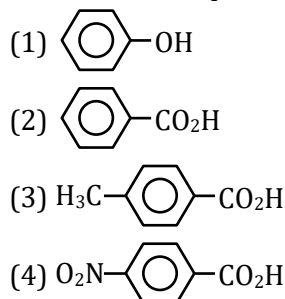


The relative stabilities of these carbocations are such that :-

- (1) $d < b < c < a$ (2) $b < d < c < a$
(3) $d < b < a < c$ (4) $b < d < a < c$

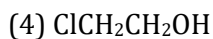
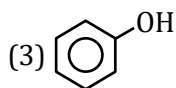
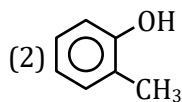
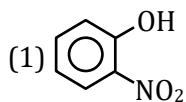
CGC020

22. Most acidic compound is :-



CGC016

23. Which one of the following compounds is most acidic :-

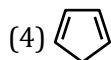
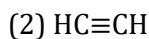
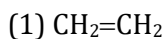


CGC030

24. Which of the following is most acidic :-
 (1) phenol (2) benzyl alcohol
 (3) m-chloro phenol (4) cyclohexanol

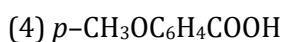
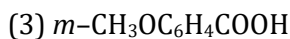
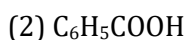
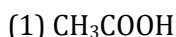
CGC031

25. Which of the following is the most acidic compound :-



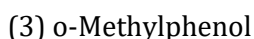
CGC034

26. Among the following the strongest acid is :-



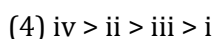
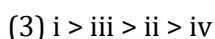
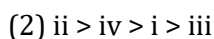
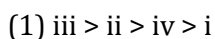
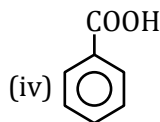
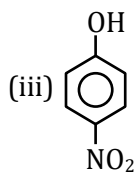
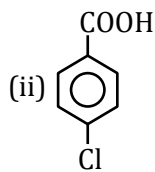
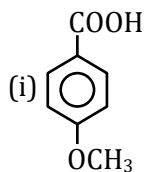
CGC035

27. Phenol is less acidic than



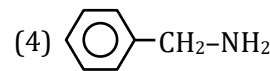
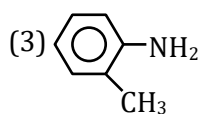
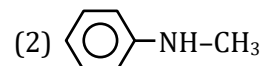
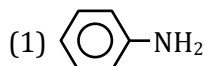
CGC038

28. Arrange the following acid in decreasing order of their acidic strength.



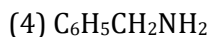
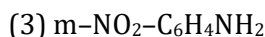
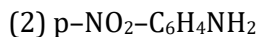
CGC039

29. Which of the following is the strongest base :-



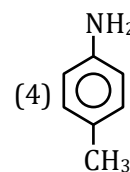
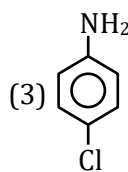
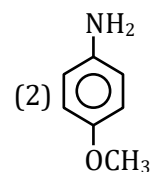
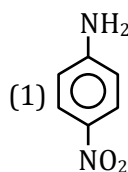
CGC032

30. Among the following, the strongest base is :-



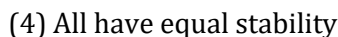
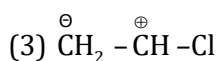
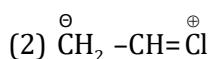
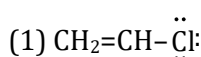
CGC021

31. Which of the following is least basic :-



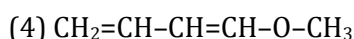
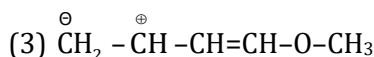
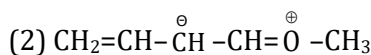
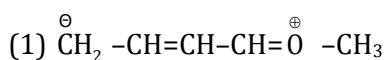
CGC025

32. Which resonating structure of vinyl chloride is least stable :-



CGC017

33. Which one of the following resonating structures of 1-methoxy-1,3-butadiene is least stable :-



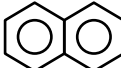
CGC036

34. In which of the following compounds carbon-chlorine bond distance is minimum :-

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

CGC019

35. Among the following the aromatic is

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

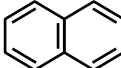
CGC026

36. Which is aromatic among the following

- (1)  (2) 
(3)  (4) All the above

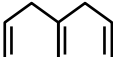
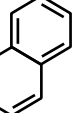
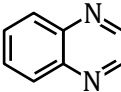
CGC027

37. The non aromatic compound among the following is :-

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

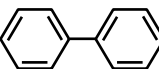
CGC029

38. Which is Aromatic compound :-

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

CGC033

39. Four structures are given in options (a) to (d). Examine them and select the aromatic structures.

- (a)  + (b) 
(c)  (d) 
(1) a and d (2) b and c
(3) a and b (4) a and c

CGC037

Hyperconjugation

40. Which of the following compounds exhibits hyperconjugation :

- (1) Phenol (2) Ethyne
(3) Ethanol (4) Propene

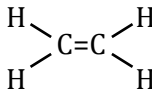
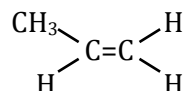
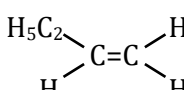
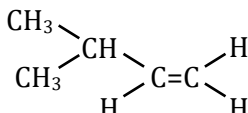
CGC040

41. Which of the following is least stable :-

- (1) $\text{CH}_3\text{—}\overset{\oplus}{\text{C}}\text{H—CH}_3$ (2) $\text{CH}_3\text{—CH}_2\text{—}\overset{\oplus}{\text{C}}\text{H}_2$
(3) $\text{CH}_3\text{—}\overset{\oplus}{\text{C}}(\text{CH}_3)_2$ (4) $\text{CH}_3\text{—}\overset{\oplus}{\text{C}}(\text{CH}_3)_2\text{—CH—C}_6\text{H}_5$

CGC041

42. Which of the following is most stable alkene :-

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

CGC042

Tautomerism

43. Tautomerism is due to :-

- (1) Delocalization of sigma electrons
(2) Delocalization of pi electrons
(3) Migration of active-H-atom
(4) None is correct

CGC043

44. Which of the following will lead to maximum enolisation :-

- (1) $\text{CH}_3\text{—}\overset{\text{O}}{\parallel}\text{C—CH}_3$
(2) $\text{CH}_3\text{—}\overset{\text{O}}{\parallel}\text{C—CH}_2\text{—}\overset{\text{O}}{\parallel}\text{C—H}$
(3) $\text{CH}_3\text{—}\overset{\text{O}}{\parallel}\text{C—CH—}\overset{\text{O}}{\parallel}\text{C—CH}_3$
(4) All have equal

CGC044

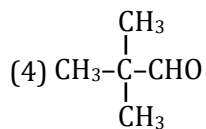
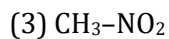
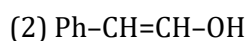
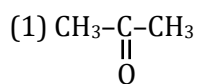
45. Urea $\left[\begin{array}{c} \text{H}_2\text{N}-\text{C}-\text{NH}_2 \\ \parallel \\ \text{O} \end{array} \right]$ molecule exhibits which

type of isomerism:-

- (1) Chain
- (2) Position
- (3) Geometrical
- (4) Tautomerism

CGC045

46. Tautomerism is not observed in :-



CGC046

EXERCISE-I (Conceptual Questions)

ANSWER KEY

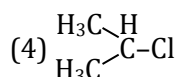
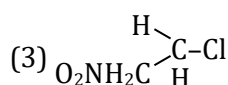
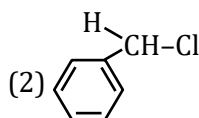
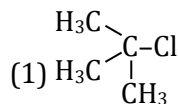
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Answer	2	3	2	3	3	1	1	3	2	1	2	3	3	4	2
Question	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Answer	2	4	3	3	4	1	4	1	3	4	3	2	2	4	4
Question	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Answer	1	3	3	3	3	4	1	4	4	4	2	2	3	3	4
Question	46														
Answer	4														

EXERCISE - II (Previous Year Questions)

AIPMT/NEET

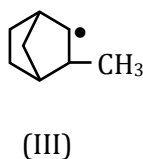
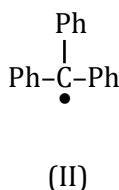
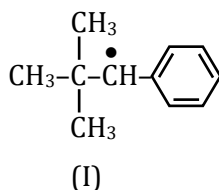
AIPMT 2015

1. In which of the following compounds, C-Cl bond ionisation shall give most stable carbonium ion?



CGC059

2. Consider the following compounds

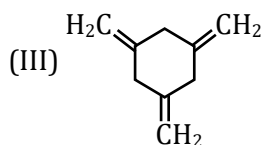
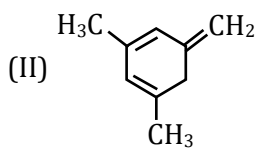
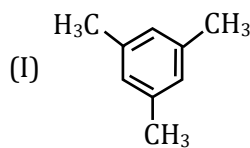


Hyperconjugation occurs in :-

- (1) II only (2) III only
(3) I and III (4) I only

CGC060

3. Given :-

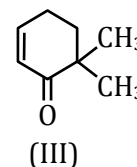
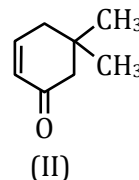
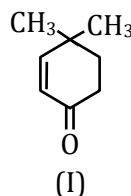


The enthalpy of the hydrogenation of these compounds will be in the order as :-

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

CGC061

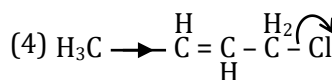
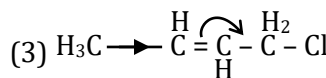
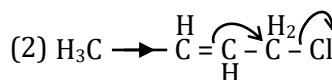
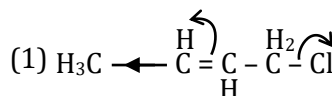
4. Which of the given compounds can exhibit tautomerism ?



- (1) I and III (2) II and III
(3) I, II and III (4) I and II

CGC062

5. Which of the following is the most correct electron displacement for a nucleophilic reaction to take place?



CGC063

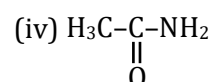
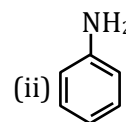
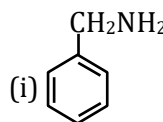
Re-AIPMT 2015

6. Which of the following statements is not correct for a nucleophile ?

- (1) Nucleophiles attack low e^- density sites
(2) Nucleophiles are not electron seeking
(3) Nucleophile is a Lewis acid
(4) Ammonia is a nucleophile

CGC064

7. Correct order of K_b is



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

CGC065

NEET-I 2016

8. The correct statement regarding a carbonyl compound with a hydrogen atom on its alpha carbon, is :-

- (1) A carbonyl compound with a hydrogen atom on its alpha-carbon never equilibrates with its corresponding enol.
- (2) A carbonyl compound with a hydrogen atom on its alpha-carbon rapidly equilibrates with its corresponding enol and this process is known as aldehyde-ketone equilibration.
- (3) A carbonyl compound with a hydrogen atom on its alpha-carbon rapidly equilibrates with its corresponding enol and this process is known as carbonylation.
- (4) A carbonyl compound with a hydrogen atom on its alpha-carbon rapidly equilibrates with its corresponding enol and this process is known as keto-enol tautomerism.

CGC066

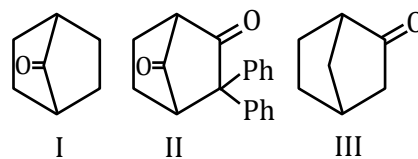
9. The **correct** statement regarding the basicity of arylamines is :-

- (1) Arylamines are generally less basic than alkylamines because the nitrogen lone-pair electrons are delocalized by interaction with the aromatic ring π electron system.
- (2) Arylamines are generally more basic than alkylamines because the nitrogen lone-pair electrons are not delocalized by interaction with the aromatic ring π electron system.
- (3) Arylamines are generally more basic than alkylamines because of aryl group.
- (4) Arylamines are generally more basic than alkylamines, because the nitrogen atom in arylamines is sp -hybridized.

CGC067

NEET-II 2016

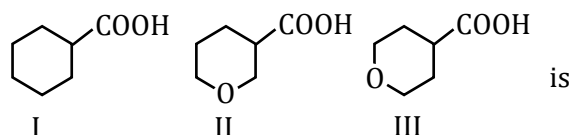
10. Which among the given molecules can exhibit tautomerism ?



- (1) Both I and II
- (2) Both II and III
- (3) III only
- (4) Both I and III

CGC069

11. The **correct** order of strengths of the carboxylic acids



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

CGC070

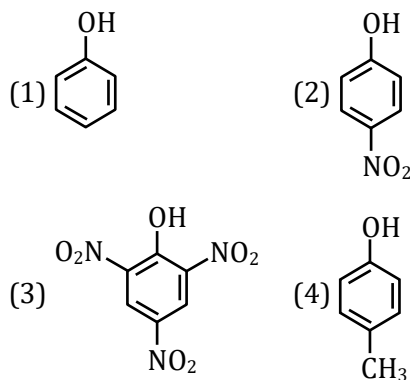
NEET(UG) 2017

12. Which one is the correct order of acidity ?

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

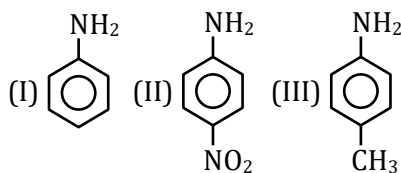
CGC071

13. Which one is the most acidic compound ?



CGC072

14. The **correct** increasing order of basic strength for the following compounds is :



- (1) III < I < II (2) III < II < I
(3) II < I < III (4) II < III < I

CGC073

15. The **correct** statement regarding electrophile is:-

- (1) Electrophile is a negatively charged species and can form a bond by accepting a pair of electrons from another electrophile
(2) Electrophiles are generally neutral species and can form a bond by accepting a pair of electrons from a nucleophile
(3) Electrophile can be either neutral or positively charged species and can form a bond by accepting a pair of electrons from a nucleophile
(4) Electrophile is a negatively charged species and can form a bond by accepting a pair of electrons from a nucleophile

CGC074

NEET(UG) 2018

16. Which of the following is correct with respect to -I effect of the substituents ? (R = alkyl)

- (1) $-\text{NH}_2 < -\text{OR} < -\text{F}$ (2) $-\text{NR}_2 < -\text{OR} < -\text{F}$
(3) $-\text{NH}_2 > -\text{OR} > -\text{F}$ (4) $-\text{NR}_2 > -\text{OR} > -\text{F}$

CGC075

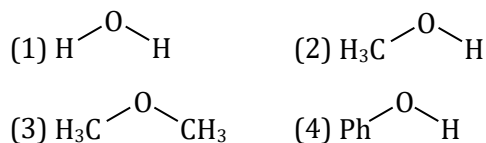
NEET(UG) 2019

17. The **correct** order of the basic strength of methyl substituted amines in aqueous solution is :-

- (1) $(\text{CH}_3)_2\text{NH} > \text{CH}_3\text{NH}_2 > (\text{CH}_3)_3\text{N}$
(2) $(\text{CH}_3)_3\text{N} > \text{CH}_3\text{NH}_2 > (\text{CH}_3)_2\text{NH}$
(3) $(\text{CH}_3)_3\text{N} > (\text{CH}_3)_2\text{NH} > \text{CH}_3\text{NH}_2$
(4) $\text{CH}_3\text{NH}_2 > (\text{CH}_3)_2\text{NH} > (\text{CH}_3)_3\text{N}$

CGC076

18. The compound that is most difficult to protonate is :-



CGC077

NEET(UG) 2019 (ODISHA)

19. The most stable carbocation, among the following is :-

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

CGC078

NEET(UG) 2020

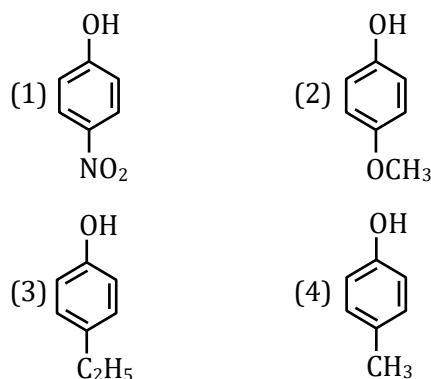
20. A tertiary butyl carbocation is more stable than a secondary butyl carbocation because of which of the following ?

- (1) Hyperconjugation
(2) -I effect of $-\text{CH}_3$ groups
(3) +R effect of $-\text{CH}_3$ groups
(4) -R effect of $-\text{CH}_3$ groups

CGC079

NEET(UG) 2020 (COVID-19)

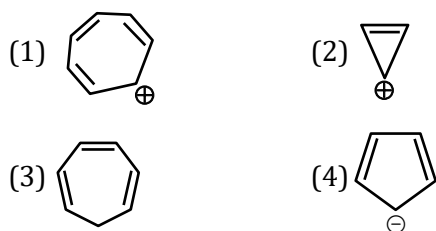
21. Which of the following substituted phenols is the strongest acid?



CGC080

NEET(UG) 2022

22. Which compound amongst the following is not an aromatic compound ?



CGC098

NEET(UG) 2023

23. Given below are two statements:

Statement-I: The acidic strength of monosubstituted nitrophenol is higher than phenol because of electron withdrawing nitro group.

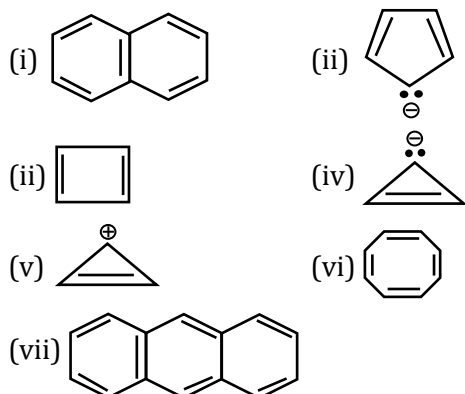
Statement-II: o-nitrophenol, m-nitrophenol and p-nitrophenol will have same acidic strength as they have one nitro group attached to the phenolic ring.

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

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

CGC099

24. Consider the following compounds/species:

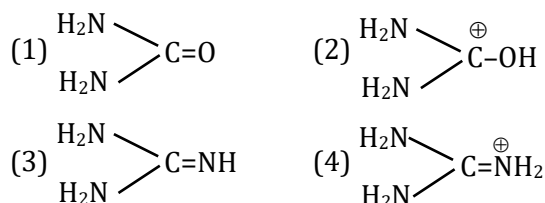


The number of compounds/species which obey Huckel's rule is ____.

- (1) 6 (2) 2 (3) 5 (4) 4

CGC100

25. Which amongst the following compounds/species is least basic ?



CGC101

NEET(UG) 2024

26. Given below are **two** statements:

Statement-I : In an organic compound, when inductive and electromeric effects operate in opposite directions, the inductive effect predominates.

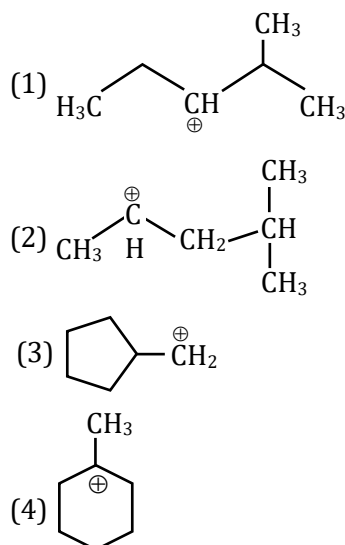
Statement-II : Hyperconjugation is observed in o-xylene.

In the light of the above statements, choose the **correct** answer from the options given below :

- (1) Statement-I is true but Statement-II is false.
 (2) Statement-I is false but Statement-II is true.
 (3) Both Statement-I and Statement-II are true.
 (4) Both Statement-I and Statement-II are false.

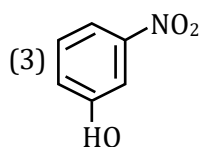
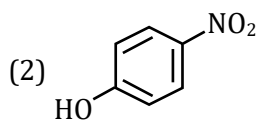
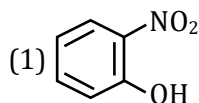
CGC102

27. The most stable carbocation among the following is :



CGC103

28. Intramolecular hydrogen bonding is present in :



(4) HF

CGC104

NEET (UG) 2024 (Re-examination)

29. Methyl group attached to a positively charged carbon atom stabilizes the carbocation due to:

- (1) -I inductive effect
- (2) electromeric effect
- (3) hyperconjugation
- (4) mesomeric effect

CGC105

EXERCISE-II (Previous Year Questions)

ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	2	2	1	3	2	3	2	4	1	3	4	1	3	3	3
Question	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Answer	1	1	4	3	1	1	3	2	4	2	2	4	1	3	

EXERCISE – III (Analytical Questions)

Master Your Understanding

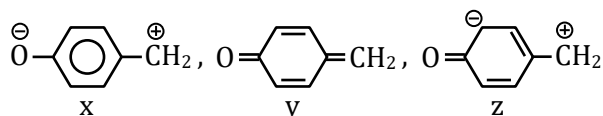
1. Consider following molecule / ions as nucleophile or electrophile and select incorrect statement.



- (1) A, B and D are electrophile
 (2) B is electrophile while A, C and D are nucleophile.
 (3) A and B are electrophile while C is nucleophile.
 (4) Only C is nucleophile.

CGC095

2. Select the correct option for stability of following resonance structures :-



- (1) $x > y > z$ (2) $z > y > x$
 (3) $y > x > z$ (4) $y > z > x$

CGC085

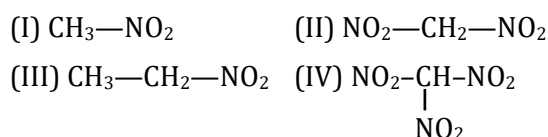
3. (a) $\text{CH}_2=\text{CH}-\text{CH}=\text{CH}_2$
 (b) $\text{CH}_3-\text{CH}=\text{CH}_2$
 (c) CH_3-CH_3

C—C single bond distance would be :-

- (1) $a < b < c$ (2) $a > b < c$
 (3) $a < b > c$ (4) $a < b > c$

CGC086

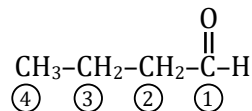
4. Arrange the following in correct order of acidic strength :



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

CGC090

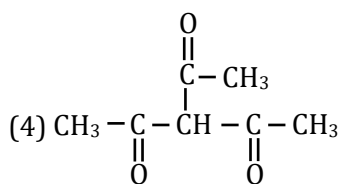
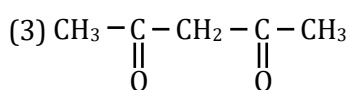
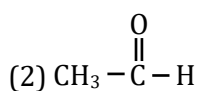
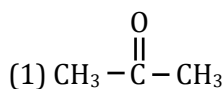
5. Which hydrogen in the following hydrogen is most acidic :-



- (1) C_1-H (2) C_2-H (3) C_3-H (4) C_4-H

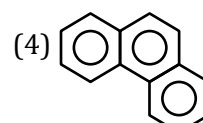
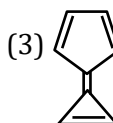
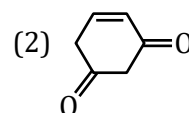
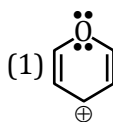
CGC081

6. Which of the following has the most acidic proton:



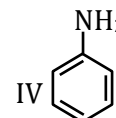
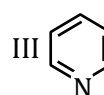
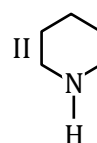
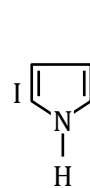
CGC082

7. Which is not aromatic compound :-



CGC083

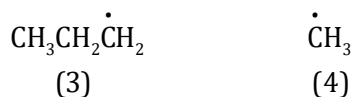
8. The correct order of decreasing basic strength is



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

CGC084

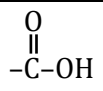
9. The correct order of stability of following carbon free radical is :-



- (1) $1 > 2 > 3 > 4$ (2) $4 > 3 > 2 > 1$
 (3) $2 > 3 > 1 > 4$ (4) $2 > 1 > 3 > 4$

CGC091

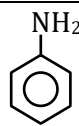
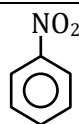
10. Match the column :-

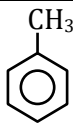
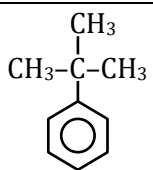
Column-I (Functional group)		Column-II (Effect)	
(a)	-OR	(p)	+M and -I
(b)		(q)	+M and +I
(c)	-CH ₃	(r)	+I and +H
(d)	$\ominus\text{O}$	(s)	-M and -I

- (1) a = q, b = s, c = r, d = p
 (2) a = p, b = r, c = s, d = q
 (3) a = p, b = s, c = r, d = q
 (4) a = q, b = s, c = p, d = r

CGC097

11. Match the column :-

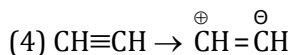
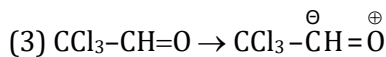
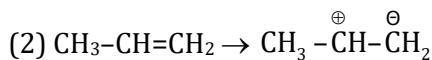
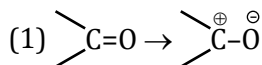
Column-I (Organic compound)		Column-II (Effect of substituent)	
(a)		(p)	+I and +H
(b)		(q)	-M and -I

(c)		(r)	+M and -I
(d)		(s)	+I only

- (1) a = p, b = q, c = r, d = s
 (2) a = r, b = q, c = s, d = p
 (3) a = r, b = q, c = p, d = s
 (4) a = p, b = r, c = s, d = q

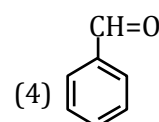
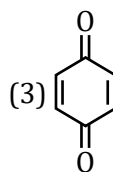
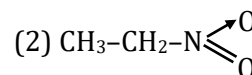
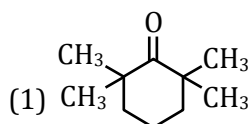
CGC096

12. Which is wrong electromeric effect :



CGC087

13. Tautomerism is exhibited by :-



CGC088

14. Identify the compound that exhibits tautomerism :-

(1) 2-Pentanone

(2) Formaldehyde

(3) 2-Butene

(4) Lactic acid

CGC089

EXERCISE-III (Analytical Questions)

ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Answer	2	3	1	1	2	4	2	4	4	3	3	3	2	1	