

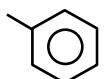
**NEET CHEMISTRY**

*Topic: GOC*

**Q.1** Which of the following belongs to + I group

- (A)  $-\text{OH}$                       (B)  $-\text{OCH}_3$   
 (C)  $-\text{COOH}$                   (D)  $-\text{CH}_3$

**Q.2** Which of them is false for order of  $-I$  effect

- (A)  $-\text{F} > -\text{Cl} > -\text{Br} > -\text{I}$   
 (B)  $-\overset{\oplus}{\text{N}}\text{R}_3 > -\overset{\oplus}{\text{N}}\text{H}_3 > -\text{NO}_2$   
 (C)  $-\text{OCH}_3 > -\text{OH} > -\text{NH}_2$   
 (D)   $> -\text{C}\equiv\text{CH} > \text{H}$

**Q.3** Which of the statement is not correct?

- (A)  $-\text{NH}_2$  is ortho-para directing group  
 (B)  $-\text{CHO}$  is meta directing group  
 (C)  $:\text{CCl}_2$  is an electrophile  
 (D)  $-\overset{\cdot\cdot}{\text{O}}\text{H}$  is  $(-M)$  group

**Q.4** Among the following compounds, the strongest acid is -

- (A)  $\text{HC}\equiv\text{CH}$                   (B)  $\text{C}_6\text{H}_6$   
 (C)  $\text{C}_2\text{H}_6$                       (D)  $\text{CH}_3\text{OH}$

**Q.5** Heterolysis of propane will yield -

- (A)  $\dot{\text{C}}\text{H}_3$  and  $\dot{\text{C}}_2\text{H}_5$  radicals
- (B)  $\text{CH}_3^-$  and  $\text{CH}_3\text{CH}_2^+$  ions
- (C)  $\text{CH}_3^+$  and  $\text{CH}_3\text{CH}_2^-$  ions
- (D)  $\text{CH}_3^+$  and  $\text{CH}_3\text{CH}_2^+$  ions

**Q.6** Carbocations may be stabilised by -

- (A)  $\pi$ -bonds only at allylic position
- (B)  $\pi$ -bonds only at vinylic position
- (C)  $\pi$ -bonds at allylic and nonallylic position also
- (D) -I effect

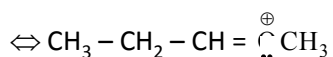
**Q.7** In the anion  $\text{HCOO}^-$ , the two carbon-oxygen bonds are found to be equal length. What is the reason for it -

- (A) the C=O bond is weaker than the C—O bond
- (B) the anion  $\text{HCOO}^-$  has two resonating structures
- (C) the electronic orbitals of carbon atom are hybridized
- (D) the anion of obtained by removal of proton from the acid molecule

**Q.8** Which of the following resonance structures is the major contributor to the resonance hybrid ?



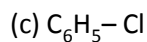
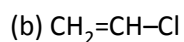
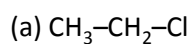
(I)



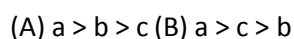
(II)

- (A) I
- (B) II
- (C) Both have equal contribution
- (D) They are not resonance structures

**Q.9** Consider the following three halides -



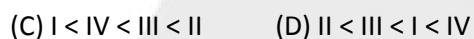
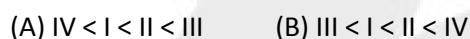
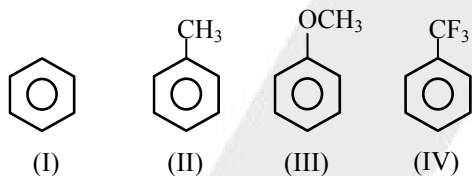
Arrange C-Cl bond length of these compounds in decreasing order -



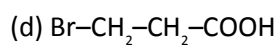
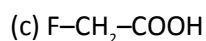
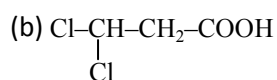
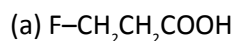
**Q.10** The species  $\text{CH}_3\overset{+}{\text{C}}\text{HCH}_3$  is less stable than -



**Q.11** Increasing order of electrophilic substitution for following compounds -



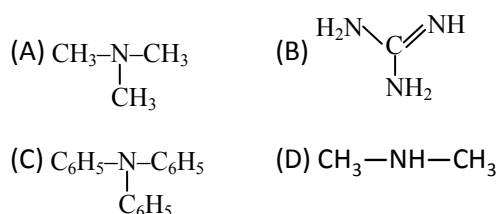
**Q.12** Arrange in decreasing  $\text{pK}_b$  -



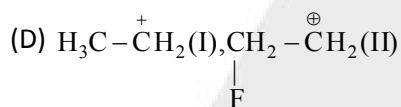
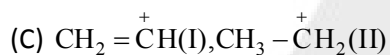
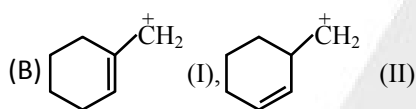
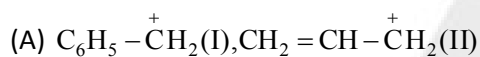
Correct answer is -

- (A) (b) > (d) > (a) > (c)
- (B) (a) > (c) > (d) > (b)
- (C) (c) > (b) > (a) > (d)
- (D) (d) > (b) > (a) > (c)

Q.13 The strongest base is -



Q.14 In which of the following cases, the carbocation (I) is less stable than the carbocation (II) ?



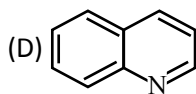
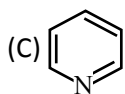
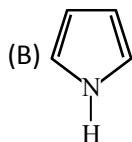
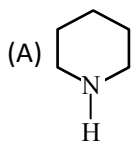
Q.15 Which among the following species is an ambident nucleophile -

- (A) Acetone      (B) Cyanide ion
- (C) Nitrite ion      (D) Sulphite ion

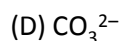
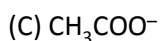
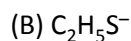
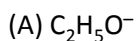
Q.16 Which of the following statements is not true about the resonance contributing structures of a resonance hybrid -

- (A) Contributing structures contribute to the resonance hybrid in proportion of their energies
- (B) Equivalent contributing structures make the resonance very important
- (C) Contributing structures represent hypothetical molecules having no real existence
- (D) Contributing structures are less stable than the resonance hybrid

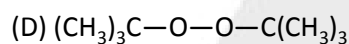
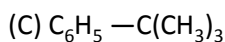
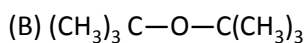
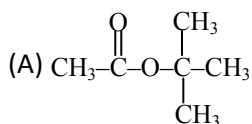
**Q.17** Among the given compounds, the one which is least basic is -



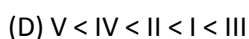
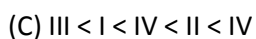
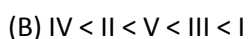
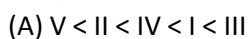
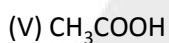
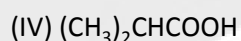
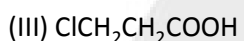
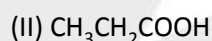
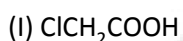
**Q.18** Which of the following is the weakest nucleophile -



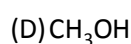
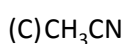
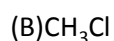
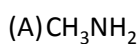
**Q.19** Which of the following compounds on gentle heating will undergo facile homolytic bond cleavage ?



**Q.20** Give the correct order of increasing acidity of the following compounds -



**Q.21** Which of the following molecules can behave both as a nucleophile and an electrophile?

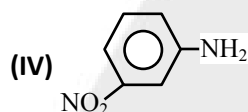
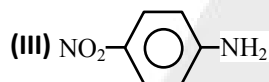
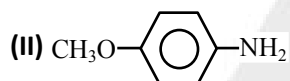
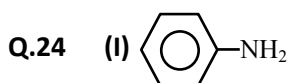


**Q.22** Which of the following shows the correct order of decreasing acidity -

- (A)  $\text{PhCO}_2\text{H} > \text{PhSO}_3\text{H} > \text{PhCH}_2\text{OH} > \text{PhOH}$
- (B)  $\text{PhSO}_3\text{H} > \text{PhOH} > \text{PhCH}_2\text{OH} > \text{PhCH}_2\text{OH}$
- (C)  $\text{PhCO}_2\text{H} > \text{PhOH} > \text{PhCH}_2\text{OH} > \text{PhSO}_3\text{H}$
- (D)  $\text{PhSO}_3\text{H} > \text{PhCO}_2\text{H} > \text{PhOH} > \text{PhCH}_2\text{OH}$

**Q.23** Which of the following correctly shows the order of decreasing basicity -

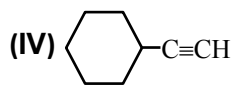
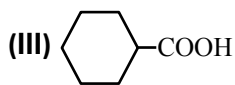
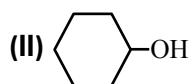
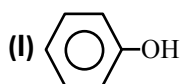
- (A) Aniline > o-nitroaniline > p-nitroaniline > m-nitroaniline
- (B) Aniline > p-nitroaniline > o-nitroaniline > m-nitroaniline
- (C) Aniline > m-nitroaniline > p-nitroaniline > o-nitroaniline
- (D) o-Nitroaniline > p-nitroaniline > aniline > m-nitroaniline



The correct order of decreasing basicity of the above compound is -

- (A) I > II > III > IV
- (B) II > I > IV > III
- (C) III > IV > II > I
- (D) II > I > III > IV

**Q.25** Give the correct order of increasing acidity of the following compounds -



(A) II < I < IV < III

(B) IV < II < I < III

(C) I < II < IV < III

(D) IV < I < II < III

**Q.26** Select the correct order of basicity -

(A)  $\text{CH}_3\text{CH}_2^- > \text{CH}_2 = \text{CH}^- > \text{HC} \equiv \text{C}^- > \text{OH}^-$

(B)  $\text{CH}_3\text{CH}_2^- > \text{HC} \equiv \text{C}^- > \text{CH}_2 = \text{CH}^- > \text{OH}^-$

(C)  $\text{CH}_3\text{CH}_2^- > \text{OH}^- > \text{HC} \equiv \text{C}^- > \text{CH}_2 = \text{CH}^-$

(D)  $\text{OH}^- > \text{HC} \equiv \text{C}^- > \text{CH}_2 = \text{CH}^- > \text{CH}_3\text{CH}_2^-$

**Q.27** Which of the following substituents will decrease the acidity of phenol -

(A)  $-\text{NO}_2$

(B)  $-\text{CN}$

(C)  $-\text{CH}_3$

(D)  $-\text{CHO}$

**Q.28** The correct order of increasing stability of the following carbocations is -

(A)  $\text{CH}_3\overset{+}{\underset{\text{F}}{\text{C}}}\text{HCH}_2 > \text{FCH}_2\overset{+}{\text{C}}\text{H}_2\text{CH}_2 > \text{CH}_3\text{CH}_2\overset{+}{\text{C}}\text{H}_2 > \text{CH}_3\overset{+}{\text{C}}\text{H}_2\text{OCH}_2$

(B)  $\text{CH}_3\overset{+}{\text{C}}\text{H}_2\text{OCH}_2 > \text{CH}_3\text{CH}_2\overset{+}{\text{C}}\text{H}_2 > \text{FCH}_2\overset{+}{\text{C}}\text{H}_2\text{CH}_2 > \text{CH}_3\overset{+}{\underset{\text{F}}{\text{C}}}\text{HCH}_2$

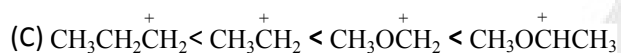
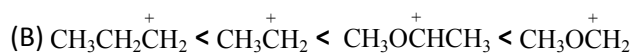
(C)  $\text{FCH}_2\overset{+}{\text{C}}\text{H}_2\text{CH}_2 > \text{CH}_3\overset{+}{\text{C}}\text{H}_2\text{OCH}_2 > \text{CH}_3\text{CH}_2\overset{+}{\text{C}}\text{H}_2 > \text{CH}_3\overset{+}{\underset{\text{F}}{\text{C}}}\text{HCH}_2$

(D)  $\text{CH}_3\overset{+}{\underset{\text{F}}{\text{C}}}\text{HCH}_2 > \text{CH}_3\text{CH}_2\overset{+}{\text{C}}\text{H}_2 > \text{FCH}_2\overset{+}{\text{C}}\text{H}_2\text{CH}_2 > \text{CH}_3\overset{+}{\text{C}}\text{H}_2\text{OCH}_2$

**Q.29** In which of the following does the C–H bond (shown by a thick line) have the least bond dissociation energy -



**Q.30** Which of the following shows the correct order of stability -



## ANSWER KEY

Que.	1	2	3	4	5	6	7	8	9	10
Ans.	D	D	D	D	B	A	B	A	A	A
Que.	11	12	13	14	15	16	17	18	19	20
Ans.	A	C	B	C	A	A	B	D	D	B
Que.	21	22	23	24	25	26	27	28	29	30
Ans.	C	D	C	B	B	A	C	B	A	C