Exercise-1

Marked Questions may have for Revision Questions.

OBJECTIVE QUESTIONS

Section (A) : Carbanions





(4) $(CH_3)_3 \stackrel{+}{C} > C_6H_5 \stackrel{+}{C} H_2 > CH_2 = CH_2 \stackrel{+}{C} H_2 > (CH_3)_2 \stackrel{+}{C} H_3$

Ф

- B-10. Which of the following statement is correct ?
 - (1) Allyl carbocation (H₂C=CH $-\overset{\tau}{C}$ H₂) is more stable than propyl carbocation.
 - (2) Ethyl carbocation is more stable than allyl carbocation.
 - (3) Vinyl carbocation is more stable than ethyl carbocation.
 - (4) Benzyl carbocation is more stable than cyclopropyl methyl carbocation.

B-11.♠ Which of the following shows the correct order of stability ?

- (1) $CH_3O\dot{C}HCH_3 \leftarrow CH_3O\dot{C}H_2 \leftarrow CH_3\dot{C}H_{CH_3} \leftarrow CH_3\dot{C}H_2$ (2) $CH_3\overset{\oplus}{C}H_{CH_3} \leftarrow CH_3\dot{C}H_2 \leftarrow CH_3O\dot{C}HCH_3 \leftarrow CH_3O\dot{C}H_2$ (3) $CH_3\dot{C}H_2 \leftarrow CH_3\overset{\oplus}{C}H_{CH_3} \leftarrow CH_3O\dot{C}H_2 \leftarrow CH_3O\dot{C}HCH_3$ (4) $CH_3O\dot{C}H_2 \leftarrow CH_3O\dot{C}HCH_3 \leftarrow CH_3\dot{C}H_2 \leftarrow CH_3\overset{\oplus}{C}H_{CH_3}$
- B-12. Decreasing order of stability of given carbocations is as :

(i)
(ii)
$$CH_2 = CH_- \overset{\oplus}{C}H_2$$

(iii) $C_6H_5 - \overset{\oplus}{C}H_2$
(iv) $CH_3 - \overset{\oplus}{C}H_- CH_3$
(iv) $CH_3 - \overset{\oplus}{C}H_- CH_3$

B-13. Which of the following shows the correct decreasing order of stability ?

$$(1) \xrightarrow{CH_{3}} \xrightarrow{CH_{2}} \xrightarrow{CH_{3}O} \xrightarrow{CH_{2}} \xrightarrow{CH_{2}}$$

B-14. Which is least stable carbocation ?





B-15. Which one is most stable carbocaton ?





B-16. Which one is least stable free radical ?



C-7. Which one has maximum % of enol content ?





D-19. Strength of acidity is in order :





MISTRY FOR JE	E	Gene	ral Organic Chemistry - II
(1) Alcohols	(2) Ethers	(3) Ester	(4) All of these
Which of the followin (1) (CH ₃) ₃ N > (CH ₃): (3) (CH ₃) ₂ NH > CH ₃	ng shows the correct o 2NH > CH3NH2 > NH3 NH2 > (CH3)3N > NH3	order of decreasing basic (2) (CH ₃) ₂ NH > (C (4) (CH ₃) ₂ NH > C	ity in gas phase ? CH₃)₃N > CH₃NH₂ > NH₃ H₃NH₂ > NH₃ > (CH₃)₃N
Which of the followin (1) $(CH_3)_3N > (CH_3)_2$ (3) $(CH_3)_2NH > CH_3$	ng shows the correct (2NH > CH3NH2 > NH3 NH2 > (CH3)3N > NH3	order of decreasing basic (2) (CH ₃) ₂ NH > (C (4) (CH ₃) ₂ NH > C	ity in aqueous medium ? CH₃)₃N > CH₃NH₂ > NH₃ H₃NH₂ > NH₃ > (CH₃)₃N
Which of the followin (1) $(C_2H_5)_3N > (C_2H_1)_3N > (C_2H_2)_3N > C_2H_2$	ng shows the correct o 5)2NH > C2H5NH2 > N H5NH2 > (C2H5)3N > N	order of decreasing basic H_3 (2) (C_2H_5) ₂ NH > (H_3 H_3 (4) (C_2H_5) ₂ NH > C	ity in aqueous medium ? C2H5)3N > C2H5NH2 > NH3 C2H5NH2 > NH3 > (C2H5)3N
The correct basic st	rength order of followi	ing anions is :	
$(1)^{CH_3-CH_2} \stackrel{\ominus}{\overset{O}{\overset{O}{\overset{O}{\overset{O}{\overset{O}{\overset{O}{\overset{O}{\overset$	$CH_2 = CH > CH = C >$	$HO \rightarrow F$	
(2) $\stackrel{\ominus}{NH}_{2}$ > CH ₃ - $\stackrel{\ominus}{CH}_{3}$	$_{2} > CH_{2} = CH > CH = C$	> F> HO	
(3) CH ₃ -CH ₂ > CH ₂	⊖ =CH 、NH₂ 、CH≡C	> HO > F	
$(4) \stackrel{\Theta}{F} > \stackrel{\Theta}{HO} > CH =$	$\stackrel{\Theta}{C}$ CH_2 $\stackrel{\Theta}{C}H_2$ $\stackrel{\Theta}{N}H_2$ $\stackrel{\Theta}{N}$	$CH_3 - CH_2$	
Arrange basicity of t (i) CH ₃ –CH ₂ –NH ₂ (1) i > ii > iii	the given compounds (ii) CH2=CH–NH2 (2) i > iii > ii	in decreasing order : ₂ (iii) CH≡C–NH₂ (3) iii > ii > i	(4) ii > iii > i
Which is the correct (1) $CH_3CH_2CH_3 < C$ (2) $CH_3CH_2CH_3 < C$ (3) $CH_3CH_2NH_2 < C$ (4) $CH_3CH_2CH_3 < C$	order of increasing b H ₃ CH ₂ SH < CH ₃ CH ₂ C H ₃ CH ₂ OH < CH ₃ CH ₂ S H ₃ CH ₂ SH < CH ₃ CH ₂ C H ₃ CH ₂ OH < CH ₃ CH ₂ N	asicity ? DH < CH ₃ CH ₂ NH ₂ SH < CH ₃ CH ₂ NH ₂ DH < CH ₃ CH ₂ CH ₃ NH ₂ < CH ₃ CH ₂ SH	
The strongest base	is :		
CH₃—N—CH₃		NH C₀H₅—N—C₀F	H 5
(1) CH ₃	(2) I NH ₂	(3) C₅H₅	(4) CH ₃ —NH—CH ₃
Decreasing order of	basicity is :	(-)	(), - 0
		$C_6H_5-N-C_6H_5$	
(i) C ₆ H₅–NH₂ (1) i > ii > iii > iv	(ii) C₀H₅–NH–C₀ł (2) iv > i > ii > iii	$H_5 \qquad (iii) \qquad C_6 H_5 (3) iii > ii > i > iv$	(iv) CH₃–CH₂–NH₂ (4) iv > iii > ii > i
The strongest base	among the following i	s :	
(1)	(2) (2) (2) (2) (2) (2) (2) (2) (2) (2)	(3) NH	(4) NH ₂
	MISTRY FOR JE (1) Alcohols Which of the followin (1) (CH ₃) ₃ N > (CH ₃); (3) (CH ₃) ₂ NH > CH ₃ ; (3) (CH ₃) ₂ NH > CH ₃ ; (3) (CH ₃) ₂ NH > CH ₃ ; (3) (CH ₃) ₂ NH > C ₂ H (1) (C ₂ H ₅) ₃ N > (C ₂ H (3) (C ₂ H ₅) ₂ NH > C ₂ H The correct basic st (1) CH ₃ - \overrightarrow{CH}_2 \overrightarrow{NH}_2 > (2) \overrightarrow{NH}_2 > CH ₃ - \overrightarrow{CH}_2 (3) CH ₃ - \overrightarrow{CH}_2 \overrightarrow{CH}_2 (4) \overrightarrow{F} > H \overrightarrow{O} > CH= Arrange basicity of t (i) CH ₃ -CH ₂ -NH ₂ (1) i > ii > iii Which is the correct (1) CH ₃ CH ₂ CH ₃ < C (2) CH ₃ CH ₂ CH ₃ < C (3) CH ₃ CH ₂ CH ₃ < C (4) CH ₃ CH ₂ CH ₃ < C (5) CH ₃ CH ₂ CH ₃ < C (4) CH ₃ CH ₂ CH ₃ < C (5) CH ₃ CH ₂ CH ₃ < C (6) CH ₃ CH ₂ CH ₃ < C (7) CH ₃ CH ₂ CH ₃ < C (1) CH ₃ CH ₂ CH ₃ < C (1) CH ₃ CH ₂ CH ₃ < C (1) CH ₃ CH ₂ CH ₃ < C (2) CH ₃ CH ₂ CH ₃ < C (3) CH ₃ CH ₂ CH ₃ < C (4) CH ₃ CH ₂ CH ₃ < C (5) CH ₃ CH ₂ CH ₃ < C (6) CH ₃ -N-CH ₃ (1) CH ₃ Decreasing order of (1) C ₆ H ₅ -NH ₂ (1) i > ii > iii > iv The strongest base (1) \overrightarrow{C}	VIISTRY FOR JEE(1) Alcohols(2) EthersWhich of the following shows the correct of(1) (CH ₃) ₃ N > (CH ₃) ₂ NH > CH ₃ NH ₂ > (CH ₃) ₃ N > NH ₃ (3) (CH ₃) ₂ NH > CH ₃ NH ₂ > (CH ₃) ₃ N > NH ₃ Which of the following shows the correct of(1) (CH ₃) ₃ N > (CH ₃) ₂ NH > CH ₃ NH ₂ > (CH ₃) ₃ N > NH ₃ (3) (CH ₃) ₂ NH > CH ₃ NH ₂ > (CH ₃) ₃ N > NH ₃ Which of the following shows the correct of(1) (C ₂ H ₅) ₃ N > (C ₂ H ₅) ₂ NH > C ₂ H ₅ NH ₂ > (C ₂ H ₅) ₃ N > N(3) (C ₂ H ₅) ₂ NH > C ₂ H ₅ NH ₂ > (C ₂ H ₅) ₃ N > NThe correct basic strength order of follow(1) CH ₃ -CH ₂ > CH ₂ =CH ₂ > CH ₂ =CH > CH=C(2) NH ₂ > CH ₃ -CH ₂ > CH ₂ =CH > CH ₂ =C(3) CH ₃ -CH ₂ > CH ₂ =CH > CH ₂ =CH > CH=C(4) F > HO > CH=C > CH ₂ =CH > MH ₂ > CH=C(4) F > HO > CH=C > CH ₂ CH > CH ₂ CH > CH ₂ CH(1) i > ii > iii(2) CH ₃ CH ₂ CH ₃ < CH ₃ CH ₂ SH < CH ₃ CH ₂ CH(1) CH ₃ CH ₂ CH ₃ < CH ₃ CH ₂ SH < CH ₃ CH ₂ CH(2) CH ₃ CH ₂ CH ₃ < CH ₃ CH ₂ CH < CH ₃ CH ₂ CH(3) CH ₃ CH ₂ CH ₃ < CH ₃ CH ₂ CH < CH ₃ CH ₂ CH(1) CH ₃ CH ₂ CH ₃ < CH ₃ CH ₂ CH < CH ₃ CH ₂ CH(1) CH ₃ CH ₂ CH ₃ < CH ₃ CH ₂ CH < CH ₃ CH ₂ CH(1) CH ₃ CH ₂ CH ₃ < CH ₃ CH ₂ CH < CH ₃ CH ₂ CH(1) CH ₃ CH ₂ CH ₃ < CH ₃ CH ₂ CH < CH ₃ CH ₂ CH(1) CH ₃ CH ₂ CH ₃ < CH ₃ CH ₂ CH < CH ₃ CH ₂ CH(1) CH ₃ CH ₂ CH ₃ < CH ₃ CH ₂ CH < CH ₃ CH ₂ CH(2) CH ₃ CH ₂ CH < CH ₃ (3) CH ₃ CH ₂ CH ₃ < CH ₃ CH ₂ CH < CH ₃ CH ₂ CH(1) CH ₃ CH ₂ CH ₃ < CH ₃ CH ₂ CH < CH ₃ CH ₂ CH(1) CH ₃ CH ₂ CH < CH ₃ <td>MISTRY FOR JEE General (1) Alcohols (2) Ethers (3) Ester Which of the following shows the correct order of decreasing basic (1) (CH₃)₃N > (CH₃)₂NH > CH₃NH₂ > NH₃ (2) (CH₃)₂NH > (CH₃)₂NH > C(H₃)₃N > NH₃ (4) (CH₃)₂NH > C(H₃)₂NH > CH₃NH₂ > NH₃ (2) (CH₃)₂NH > C(H₃)₂NH > C(H₃)₃N > NH₃ (4) (CH₃)₂NH > C(H₃)₂NH > C(H₃)₂NH > C(H₃)₃N > NH₃ (4) (CH₃)₂NH > C(H₃)₂NH > C(H₂)₂NH > C(H₃)₂NH > C(H₂)₂NH > C(H₂)₂NH > C(H₃)₂NH > C(H₂)₂NH > C(H₂</td>	MISTRY FOR JEE General (1) Alcohols (2) Ethers (3) Ester Which of the following shows the correct order of decreasing basic (1) (CH ₃) ₃ N > (CH ₃) ₂ NH > CH ₃ NH ₂ > NH ₃ (2) (CH ₃) ₂ NH > (CH ₃) ₂ NH > C(H ₃) ₃ N > NH ₃ (4) (CH ₃) ₂ NH > C(H ₃) ₂ NH > CH ₃ NH ₂ > NH ₃ (2) (CH ₃) ₂ NH > C(H ₃) ₂ NH > C(H ₃) ₃ N > NH ₃ (4) (CH ₃) ₂ NH > C(H ₃) ₂ NH > C(H ₃) ₂ NH > C(H ₃) ₃ N > NH ₃ (4) (CH ₃) ₂ NH > C(H ₂) ₂ NH > C(H ₃) ₂ NH > C(H ₂) ₂ NH > C(H ₂) ₂ NH > C(H ₃) ₂ NH > C(H ₂

E-13. Arrange the following in increasing order of pH value :









Marked Questions may have for Revision Questions.

PART-I OBJECTIVE QUESTIONS (TOUGH LEVEL)





(2) Tautomers are present in dynamic equilibrium state.

- (3) Generally keto form is more stable than enol form in mono ketones.
- (4) Atomic arrangements are same in tatuomerism.
- **14.** Which one has minimum % of enol content ?





26. Order of Ka which can be predicted by following reaction is :



DIRECTIONS:

Each question has 4 choices (1), (2), (3) and (4) out of which ONLY ONE is correct.

- (1) Both assertion and reason are correct, and the reason is the correct explanation for the assertion
- (2) Both assertion and reason are correct, but the reason is not the correct explanation for the assertion
- (3) The assertion is incorrect, but the reason is correct

- (4) Both are assertion and reason are incorrect
- A-1. Assertion : Amines are more basic than amides.Reason : Nitrogen is less electronegative than oxygen. So it is better electron donor.
- A-2. Assertion : k_{a1} of fumaric acid is more than maleic acid.
 Reason : Conjugate base of fumaric acid is stabilised by intramolecular H-bonding.
- A-3. Assertion : Salicylic acid is much stronger than its m-, p-isomers and benzoic acid itself. Reason : Conjugate base of salicylic acid is stablised by intramolecular H-bond.
- A-4. Assertion : Ortho substituted benzoic acids are stronger acid than benzoic acid.
 Reason : Ortho substituent tends to prevent coplanarity of COOH with ring. Thus resonance is diminished which increases acidic strength (ortho effect)
- A-5. Assertion : Pyrrolidine (II) is less basic than pyrrole (I)



Reason : Protonated pyrrole has delocalisation of positive charge in aromatic ring.

Section (B) : MATCH THE COLUMN

B-1. Match the column %

	Column-I (Keto)	Colu	mn-II (% enol)
(A)	$CH_3 - CH = O$	(p)	95 %
(B)	$Ph - C - CH_2 - C - Ph$ O O	(q)	76 %
(C)	$CH_3 - C - CH_2 - C - OEt$ O O	(r)	0.0001 %
(D)	$\begin{array}{c} CH_{3}-C-CH_{2}-C-CH_{3}\\ H\\O\\O\end{array} \end{array}$	(s)	7.2 %

B-2.



(D)

CH₃ –CH₂ – NH –CH₃

10 × 10⁻⁴

Section (C) : ONE OR MORE THAN ONE OPTIONS CORRECT

(s)

C-1. Which of the following stability order of anions is/are correct :



- C-2. Which of the following is/are correct for basic strength :
 - (1) $(CH_3)_2NH > (CH_3)_3N > CH_3NH_2 > NH_3$
 - (2) $(C_2H_5)_2NH > (C_2H_5)_3N > C_2H_5NH_2 > NH_3$
 - (3) $PhNH_2 > Ph_2NH > Ph_3N$



C-3. Consider the following compounds

$$\begin{array}{ccccccccccc} O & O & O & O \\ I & O_2 N - CH_2 - C - OH & F - CH_2 - C - OH & Ph - CH_2 - C - OH & CH_3 - CH_2 - C - OH \\ (I) & (II) & (III) & (III) & (IV) \end{array}$$

Which statement is/are correct :

- (1) I > II > III > IV (Acidic strength order)
- (2) I is most acidic because of M effect of $NO_2\ group$
- (3) I is most acidic because of I effect of NO $_2$ group
- (4) IV is least acidic because of + I Effect.
- C-4. Carbolic acid is less acidic than :

(1) CH₃COOH





C-5. Which of the following reactions favour backward direction ?



Among the given pairs, in which pair second compound has less enol content : C-6.



- C-7.
 - (1) CH_3COO^{Θ} , $HCOO^{\Theta}$ (2) HO^{Θ} NH_{2}^{Θ} (3) $CH_2 = CH^{\odot}$: $H - C \equiv C^{\odot}$: (4) CH₃NH₂, CH₃OH

Exercise-3

PART - I : JEE (MAIN) / AIEEE PROBLEMS (PREVIOUS YEARS)

JEE-MAIN OFFLINE

1.	Which of these will no	ot react with acetylene?	
	(1) NaOH	(2) ammonical AgNO ₃	(3) Na

[JEE-Main 2002]

(4) HCI.

General Organic Chemistry - II





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(1)

ÓСН,

NO,

(2)

ÓCH,

NO.

General Organic Chemistry - II



General Organic Chemistry - II

[JEE(Main)

3. Among the following compounds, the increasing order of their basic strength is :



4. Which of the following compounds is most reactive to an aqueous solution of sodium carbonate ?

[JEE(Main) 2017_09.04.2017]

2017_



PART - II : JEE (ADVANCED) / IIT-JEE PROBLEMS (PREVIOUS YEARS)

* Marked Questions may have more than one correct option.

- 1.
 Which of the following acid has the lowest value of acid dissociation constant :
 [JEE-02(S), 3/90]

 (A) CH₃CHFCOOH
 (B) FCH₂CH₂COOH
 (C) BrCH₂CH₂COOH
 (D) CH₃CHBrCOOH
- 2. Match the K_a values :

 K_{a} Compounds (i) 3.3 × 10⁻⁵ (a) Benzoic acid (ii) 6.3 × 10⁻⁵ (b) O,N соон (iii) 30.6 × 10⁻⁵ соон (c) соон (iv) 6.4 × 10⁻⁵ (d) соон (v) 4.2 × 10⁻⁵ (e)

[JEE-03(M), 2/60]





General Organic Chemistry - II

(A) || > | > |V > |||

(B) I > IV > III > II

(C) IV > II > III > I

(D) IV > I > II > III

(A)

(C)

Answers

					E	KERC	SISE -	· 1					
A-1.	(2)	A-2.	(3)	A-3.	(3)	A-4.	(3)	A-5.	(1)	A-6.	(1)	A-7.	(4)
A-8.	(2)	B-1.	(3)	B-2.	(4)	B-3.	(3)	B-4.	(4)	B-5.	(4)	B-6.	(1)
B-7.	(2)	B-8.	(1)	B-9.	(4)	B-10.	(1)	B-11.	(3)	B-12.	(3)	B-13.	(2)
B-14.	(3)	B-15.	(2)	B-16.	(4)	B-17.	(2)	B-18.	(2)	C-1.	(4)	C-2.	(2)
C-3.	(4)	C-4.	(1)	C-5.	(3)	C-6.	(1)	C-7.	(3)	C-8.	(2)	C-9.	(2)
D-1.	(4)	D-2.	(4)	D-3.	(3)	D-4.	(4)	D-5.	(2)	D-6.	(1)	D-7.	(2)
D-8.	(4)	D-9.	(1)	D-10.	(2)	D-11.	(4)	D-12.	(1)	D-13.	(1)	D-14.	(3)
D-15.	(4)	D-16.	(3)	D-17.	(1)	D-18 .	(1)	D-19.	(2)	D-20.	(4)	D-21.	(1)
D-22.	(3)	D-23.	(3)	D-24.	(3)	E-1.	(4)	E-2.	(4)	E-3.	(4)	E-4.	(1)
E-5.	(3)	E-6.	(2)	E-7.	(3)	E-8.	(1)	E-9.	(1)	E-10.	(2)	E-11.	(2)
E-12.	(3)	E-13.	(1)	E-14.	(2)	E-15.	(2)	E-16.	(1)	E-17.	(4)	E-18.	(1)
E-19.	(4)	E-20.	(4)	E-21.	(1)								
					E	KERC	ISE -	2					
						PAR	T - I						
1.	(1)	2.	(3)	3.	(4)	4.	(1)	5.	(2)	6.	(3)	7.	(4)
8.	(3)	9.	(2)	10.	(3)	11.	(2)	12.	(2)	13.	(4)	14.	(2)
15.	(1)	16.	(1)	17.	(3)	18.	(1)	19.	(3)	20.	(2)	21.	(4)
22.	(2)	23.	(3)	24.	(4)	25.	(2)	26.	(2)	27.	(2)	28.	(3)
29.	(2)	30.	(2)	31.	(4)								
						PAR	T - II						
A-1.	(1)	A-2.	(4)	A-3.	(1)	A-4.	(1)		A-5.	(4)			
B-1.	(A - r) ;	(B - p) ;	(C - s) ;	(D - q)		B-2.	$A \to p$	$B \to r$	$C \to q$	$D \rightarrow s$			
C-1.	(1, 2, 3	& 4)	C-2.	(2, 3 &	4)	C-3.	(1, 3 &	4)	C-4.	(1, 3 &	4)		
C-5.	(2 & 4)		C-6.	(1, 3 &	4)	C-7.	(1, 3 &	4)					
					E	KERC	SISE -	- 3					
								A 1N I					
1.	(1)	2.	(3)	3.	(4)	LINE 4	JEE-IVI (2)	AIN 5.	(3)	6.	(4)	7.	(1)
8.	(3)	9.	(1)	10.	(2)	11.	(4)	12.	(3)	13.	(3)	14.	(1)
15.	(4)	16.	(3)	17.	(4)	18.	(1)		(-)		(-)		(-)
	· /		~ /		ÓN	LINE J	EE-MA	AIN					
1.	(3)	2.	(4)	3.	(4)	4.	(1)						

PART - II (C) 2. (a) – (ii); (b) – (iii); (c) – (iv); (d) – (i); (e) – (v) 3. (A) 4. (B) 6. (D) 7. (D) 8. (A) 9. (D) 10. 2 11.

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1.

5.

|--|

12. (D) **13.** (D) **14.** (A) **15.** (D)

Additional Problems For Self Practice (APSP)

This Section is not meant for classroom discussion. It is being given to promote self-study and self testing amongst the Resonance students.

PART - I : PRACTICE TEST PAPER

Max. Marks : 120

Important Instructions

- 1. The test is of 1 hour duration.
- 2. The Test Booklet consists of **30** questions. The maximum marks are **120**.
- 3. Each question is allotted 4 (four) marks for correct response.
- **4.** Candidates will be awarded marks as stated above in Instructions No. 3 for correct response of each question.

¹/₄ (one fourth) marks will be deducted for indicating incorrect response of each question. No deduction from the total score will be made if no response is indicated for an item in the answer sheet.

- 5. There is only one correct response for each question. Filling up more than one response in any question will be treated as wrong response and marks for wrong response will be deducted accordingly as per instructions 4 above.
- Arrange following acids in decreasing order of [H⁺] concentration when dissociate in the water.

 (I) Ph-CH₂-COOH
 (II)CH₂=CHCH₂COOH
 (III)CH₃CH₂COOH

$$(1) I > II > III \qquad (2) II > III > I \qquad (3) II > I > III \qquad (4) III > II > I$$

2. Rank the following radicals in order of decreasing stability.



Max. Time : 1 Hr.



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14. Identify the most stable carbocation among the following :







-CH₃



30. The pKa values of the acids A to D are found to be 4.19, 3.41, 4.46 and 4.76. The acid having pKa of 3.41 is :



(3)

соон

NO,



Practice Test (JEE-Main Pattern)

(2) CH₃COOH

OBJECTIVE RESPONSE SHEET (ORS)

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

PART - II : PRACTICE QUESTIONS

Practice Questions: 20-50 depending on chapter length.

1. The most stable carbocation is :



Br Ag⁵ Rearranged Carbocation + AgBr 3. Rearranged carbocation is : CH₃ (1) (3) (2) (4) Which of the following is the correct order of stability of the given carbanions ? 4. $CH_3 - \overset{\oplus}{S} - CH_3 - CH^{\Theta}$ $\mathsf{HOOC}-\mathsf{CH}_{\scriptscriptstyle 2}-\mathsf{CH}^{\Theta} \qquad \mathsf{O}_{\scriptscriptstyle 2}\mathsf{N}-\mathsf{CH}_{\scriptscriptstyle 2}-\mathsf{CH}^{\Theta}$ с́н₂ ĊH. ĊH ĊH₃ III Ι Π (1) I > II > III(2) II > III > I (3) III > II > I (4) I > III > II 5. The correct stability order of following radicals is CH₃ н CH₃ Ph (3) IV > III > I \rightarrow II (1) I > II > III > IV(4) III > II > IV > I (2) IV > III > II > I6. Which is correct for carbocation stability : (1) ≻⊕ (2). ℃H₂ (3)(4)7. The proper tautomeric structure for 2-aminopyridine (X) is (X) NH. N.O ŇΗ. (1) (2) (3) (4) н Which of the following compounds does not show tautomerism ? 8.

(2) $CH_3 - N = O$

(3) $CH_2=CH-NH_2$

(4) CH2=CH-C≡N

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(1)

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16. Arrange the following carbocations in increasing order of stability:



- **17.** Which shift is preferred in the rearrangement of following carbocation to yield most stable resulting carbocation.
 - (1) 1,2–methyl shift (2) 1,2–Hydride shift
 - (3) 1,2–Phenyl shift (4) 1,2–Deuterium shift
- **18.** Which one is not tautomer of following compound :



COOH

19.

(I) COOH (Ka₁ = 5400 × 10⁻⁵) (II) H_2C COOH(Ka₁ = 140 × 10⁻⁵)

The reason for higher Ka₁ value of oxalic acid (I) as compared to that of malonic acid (II) is :

(1) The anion formed after the removal of first H[⊕] of oxalic acid (I) is more stable due to stronger –I effect

COOH

of –COOH present at close distance

(2) The anion formed after the removal of first H^{\oplus} of oxalic acid (I) is less stable due to +I effect of –COOH group.

- (3) The anion formed on removal of first H^\oplus of malonic acid is more stable than that of oxalic acid due to
- -m effect of other -COOH group.
- (4) Oxalic acid is more acidic than malonic acid due to its lesser molecular weight.



21. Which of the following reaction is feasible :



22. Select the basic strength order of following molecules ?



23. The order of basic strength of the given basic nitrogen atoms is :



(4) || > ||| > | > |V

24. Heterolysis of propane will yield :

(1) ||| > || > | > |V

(1) CH ₃ and C ₂ H ₅ radicals	(2) CH_3^- and $CH_3CH_2^+$ ions
(3) CH_3^+ and $CH_3CH_2^-$ ions	(4) $CH_{3^{+}}$ and $CH_{3}CH_{2^{+}}$ ions

- 25. Find the strongest acid among the following compounds is :
 - (1) $HOOC (CH_2)_2 COOH$ (2) $H_3N^{\oplus} (CH_2)_2 COOH$ (2) $F_3 (CH_2)_2 COOH$ (2) $F_3 (CH_2)_2 COOH$
 - (3) $F (CH_2)_2 COOH$ (4) $CH_3 (CH_2)_2 COOH$

	APSP Answers				₅⊨								
	◄					P/	ARTI						
1.	(1)	2.	(1)	3.	(4)	4.	(1)	5.	(2)	6.	(3)	7.	(3)
8.	(3)	9.	(3)	10.	(2)	11.	(2)	12.	(4)	13.	(4)	14.	(3)
15.	(4)	16.	(2)	17.	(2)	18.	(4)	19.	(3)	20.	(2)	21.	(4)
22.	(2)	23.	(3)	24.	(2)	25.	(4)	26.	(3)	27.	(3)	28.	(1)
29.	(1)	30.	(3)										
						PA	ART II						
1.	(2)	2.	(3)	3.	(2)	4.	(4)	5.	(2)	6.	(4)	7.	(4)
8.	(4)	9.	(1)	10.	(4)	11.	(2)	12.	(1)	13.	(4)	14.	(2)
15.	(4)	16.	(2)	17.	(4)	18.	(2)	19.	(1)	20.	(3)	21.	(4)
22.	(1)	23.	(4)	24.	(2)	25.	(2)						