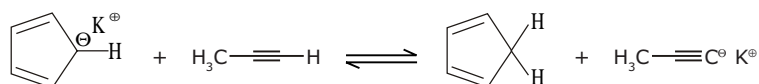
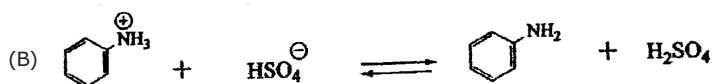
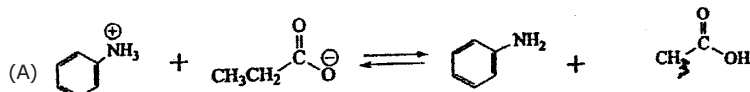


Q.1 What is true about the following equilibrium ?



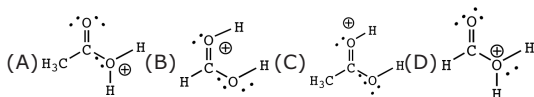
- (A) It will be almost completely shifted to the left.  
 (B) It will be almost completely shifted to the right.  
 (C) The equilibrium constant is very close to one.  
 (D) The equilibrium constant is zero.

Q.2 What is the ranking of the equilibrium constants for the following reactions ?

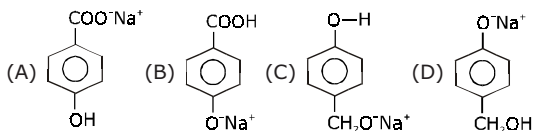


- (A)  $A > B > 1$       (B)  $1 > A > B$       (C)  $A > 1 > B$       (D)  $B > 1 > A$

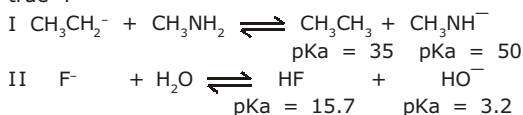
Q.3 Give one of the major products of the reaction between acetic acid ( $\text{CH}_3\text{CO}_2\text{H}$ ,  $\text{pK}_a \sim 4.5$ ) and formic acid ( $\text{HCO}_2\text{H}$ ,  $\text{pK}_a \sim 3.5$ )



Q.4 Which of the following structures are correct?

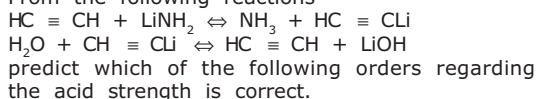


Q.5 For the following two acid base reactions, which is true ?



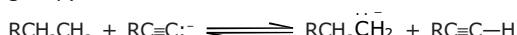
- (A) I is favored to the right, II is favored to the left  
 (B) I is favored to the left, II is favored to the right  
 (C) I is favored to the right, II is favored to the right  
 (D) I is favored to the left, II is favored to the left

Q.6 From the following reactions



- (A)  $\text{HC}\equiv\text{CH} > \text{H}_2\text{O} > \text{NH}_3$   
 (B)  $\text{HC}\equiv\text{CH} > \text{NH}_3 > \text{H}_2\text{O}$   
 (C)  $\text{H}_2\text{O} > \text{HC}\equiv\text{CH} > \text{NH}_3$   
 (D)  $\text{H}_2\text{O} > \text{NH}_3 > \text{HC}\equiv\text{CH}$

Q.7 Referring to the following equilibrium (R = alkyl group)

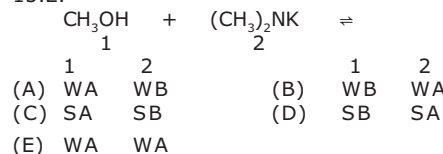


- (A)  $K < 1$ ; the equilibrium would lie to the left.  
 (B)  $K > 1$ ; the equilibrium would lie to the right.  
 (C)  $K = 1$ ; equal amounts of all species would be present  
 (D) Not enough information is given; the structure of R must be known.

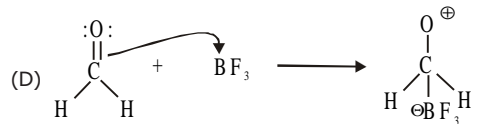
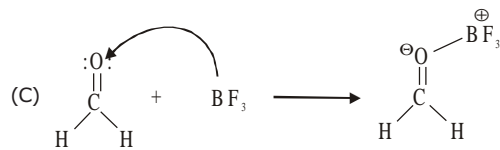
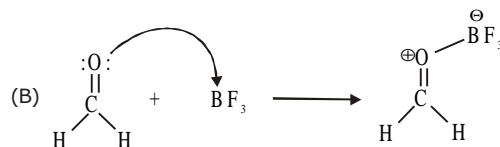
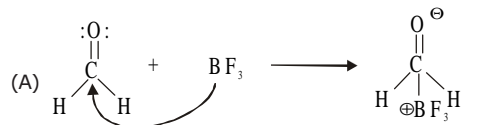
Q.8 Identify each species in the following equilibrium according to the code :

SA = stronger acid; SB = stronger base;  
 WA = weaker acid; WB = weaker base

The  $\text{pK}_a$  of  $(\text{CH}_3)_2\text{NH}$  is 36; the  $\text{pK}_a$  of  $\text{CH}_3\text{OH}$  is 15.2.



Q.9 The correct mechanism of reaction between formaldehyde and boron trifluoride given by-



Q.10 Which of the following produces a significant amount of acetylide ion on reaction with acetylene ?

- (A) Conjugate base of  $\text{CH}_3\text{OH}$  ( $\text{pK}_a = 16$ )  
 (B) Conjugate base of  $\text{H}_2$  ( $\text{pK}_a = 35$ )  
 (C) Conjugate base of  $\text{H}_2\text{O}$  ( $\text{pK}_a = 16$ )  
 (D) Both (a) and (c)



## CHEMISTRY IIT JEE (CLASS TEST - 3) ANSWER KEY

Name : ..... Roll No. : .....

	A	B	C	D	A	B	C	D	A	B	C	D
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	6	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	10	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	7	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	8	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				