JEE EXPERT

PRACTICE TEST – 6 (03 APRIL 2020)

ANSWER KEY & SOLUTION

SECTION – I (Chemistry)

Part – A

1.	B	2.	D	3.	D	4.	B
5.	C	6.	D	7.	C	8.	ACD
9.	ABD	10.	ABD	11.	ACD	12.	D
13.	B	14.	C	15.	B	16.	D

Part – C

1.	5	2.	6	3.	6	4.	3
5.	8	6.	4	7.	5		

SECTION – II (Physics)

Part – A

1.	D	2.	B	3.	B	4.	D
5.	C	6.	**C**	7	D	8.	AB
9.	AD	10.	ACD	11.	BD	12.	B
13.	C	14.	A	15.	B	16.	D

Part – C

1	0	2	0	3.	**9**	4.	3
5.	5	6.	9	7.	9		

SECTION – III (Mathematics)

Part – A

1.	C	2.	A	3.	B	4.	D
5.	D	6.	A	7.	A	8.	B,C,D
9.	A,B,C	10.	A,C,D	11.	A,D	12.	C
13.	C	14.	D	15.	A	16.	C

Part – C

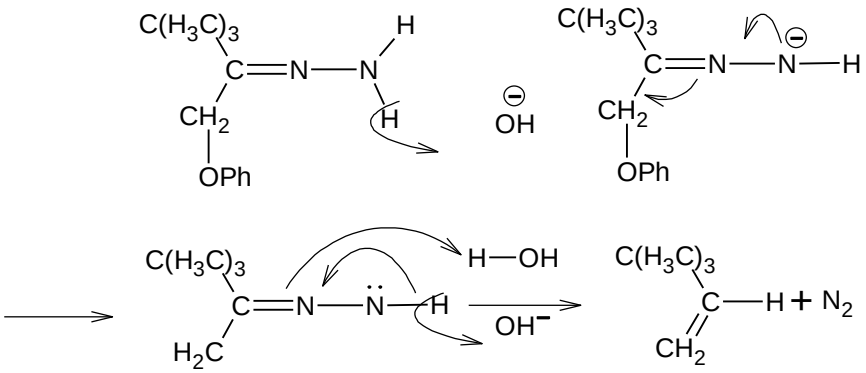
1.	8	2.	9	3.	9	4.	9
5.	8	6.	2	7.	2		

HINTS & SOLUTIONS

Section – I (Chemistry)

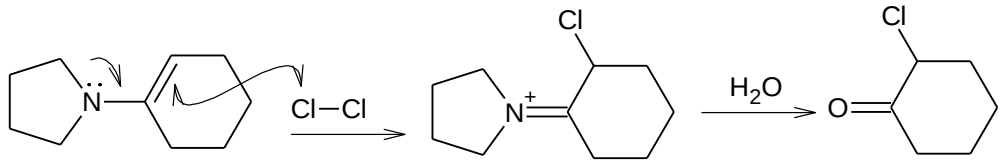
PART – A

1.

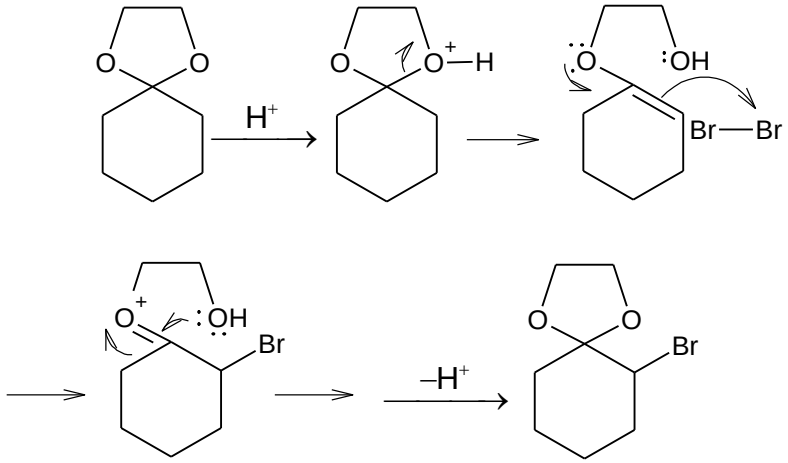


3. Direct addition of EtOH releases HCl, which undergoes conjugate addition.

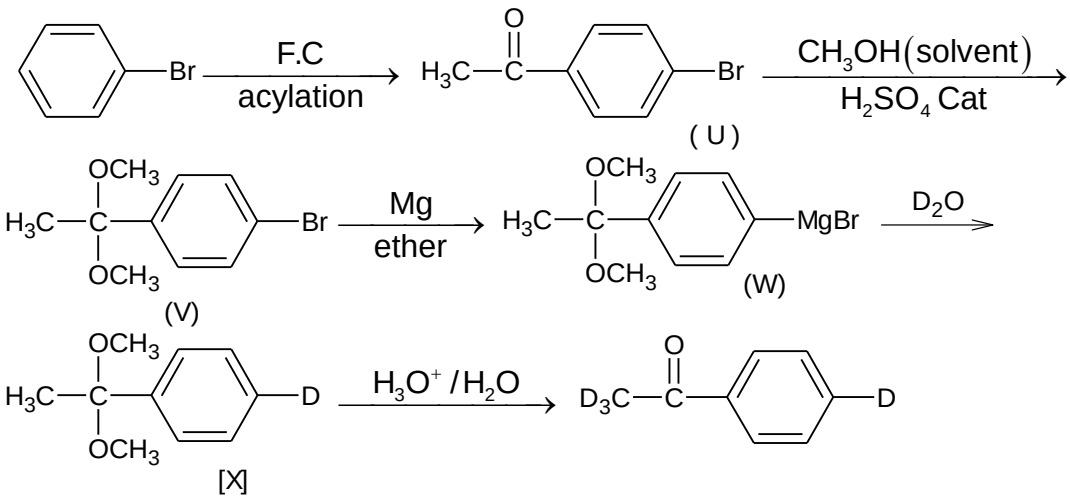
4.



5.

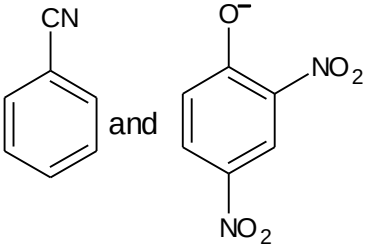


13.

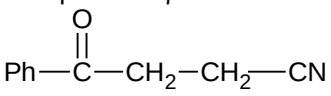


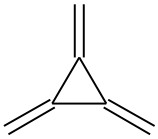
D_2O is used for protonolysis of Gringard reagent, which gives $Mg(OD)_2$ as a by-product, which maintains basic condition, the acetal is left intact. Hydrolysis of acetal is then carried out with H_3O^+/H_2O and finally deuterum exchange.

PART – C

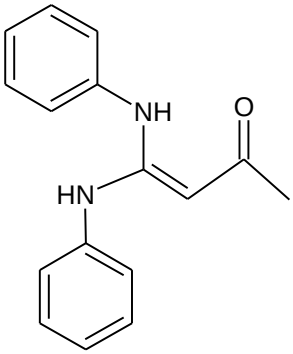
1. [X] and [Y] are  and

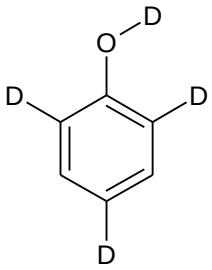
2. (IV), VIII and IX are stable in aq. Acidic medium.

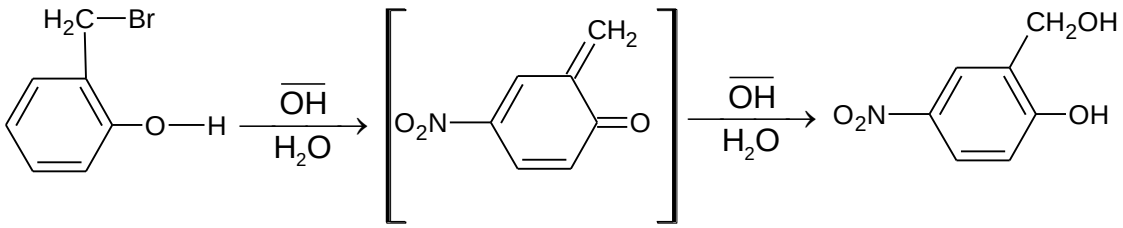
3. Cyanide ion serves as base to promote β-elimination to form α, β-unsaturated ketone. This undergoes conjugate addition to give 

4. The end product is 

5 Conjugate substitution. The compound [X] is



6. 

7. 

Intermediate

Section – I (Physics)

PART – A

1. $\frac{1}{R_{eq}} = \frac{1}{2R} + \frac{1}{2R} + \frac{1}{2R}$

3. $\frac{\mu_0 i_1}{2\pi y} - \frac{\mu_0 i_2}{2\pi x} = 0$

11. One of the diameter of helical path of the particle will be along (– x) axis and particle will touch y axis after every one revolution.

13. $2k\left(0.5\times10^{-2}\right) = mg$

$2k\left(0.8\times10^{-2}\right) = mg + IBL$

14. $V = \frac{RR_V}{R+R_V} I$

$R_A = \frac{RR_V}{R+R_V} < R$

15. $R_B = \frac{V}{I} = R + R_G$

PART – C

2. $B = \frac{\mu_0 N_1 I_1}{2r_1} - \mu_0 \frac{N_2 I_2}{2r_2}$

3. $Q = 6\times6 - 3\times3 = 27\mu C$

4. $F = \frac{\sigma^2}{2\varepsilon_0} A$

5. $r = \frac{mv}{qB} = \frac{\sqrt{2mE}}{qB}$

6. $R + \frac{V_{rated}}{I} = \frac{E}{I}$

7. $V = \frac{q}{c_1} + \frac{q}{c_2} = \frac{6}{1} + \frac{6}{2} = 9kV$