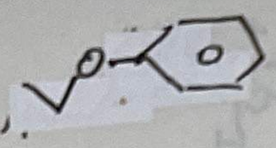
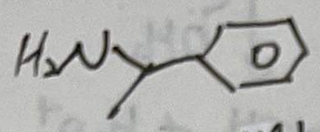
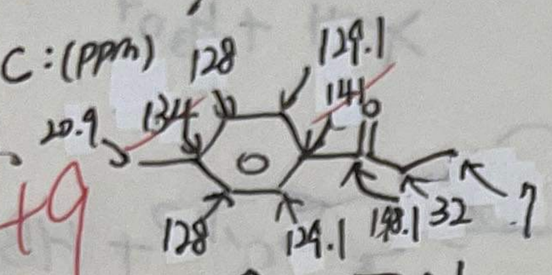
1. B
2. C
3. E
4. D
5. E
6. D
7. E
8. D
9. C
10. E
11. A
12. A
13. D
14. D
15. B
16. B
17. E
18. D
19. A
20. A
21. B
22. A
23. B
24. B
25. D
26. C
27. E
28. B
29. A
30. A

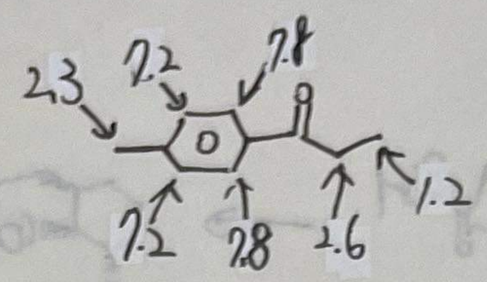
120

II.

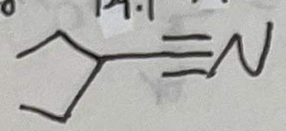
1.  +10

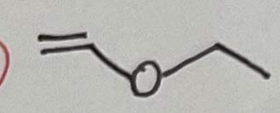
2.  +10

3. C: (PPm) 128 129.1 144 20.9 134  128 124.1 198.1 32 7

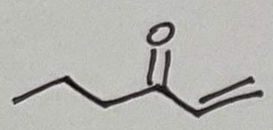
H: 2.3 7.2 7.8  7.2 2.8 2.6 1.2

+9

4.  +10

5.  +10

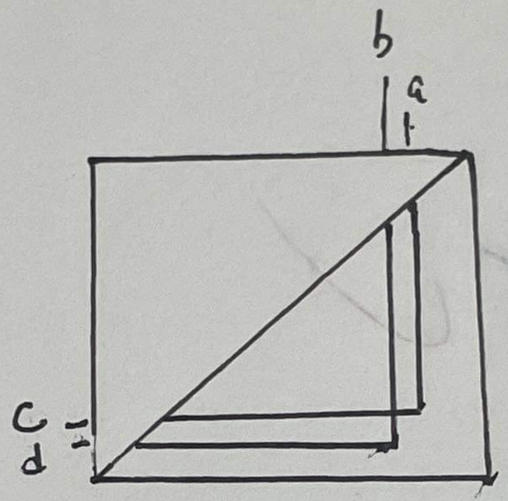
+10,

6. 

+10,

7. b and d coupling

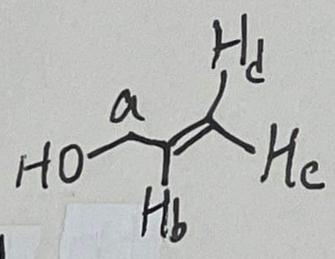
c and a coupling

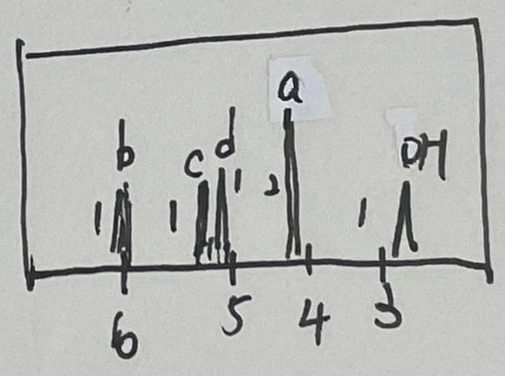


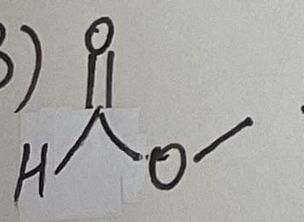
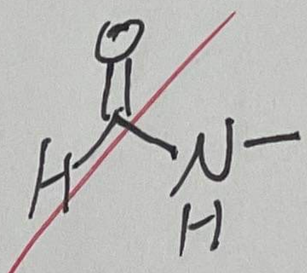
+10

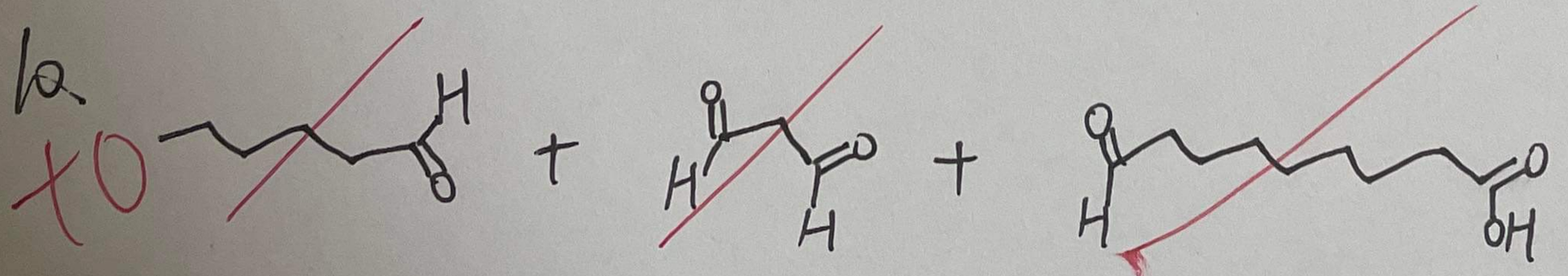
8. from left to right

b → c → d → a → OH





9. +10 (B)  + CH_3NH_2 →  (A) NA.

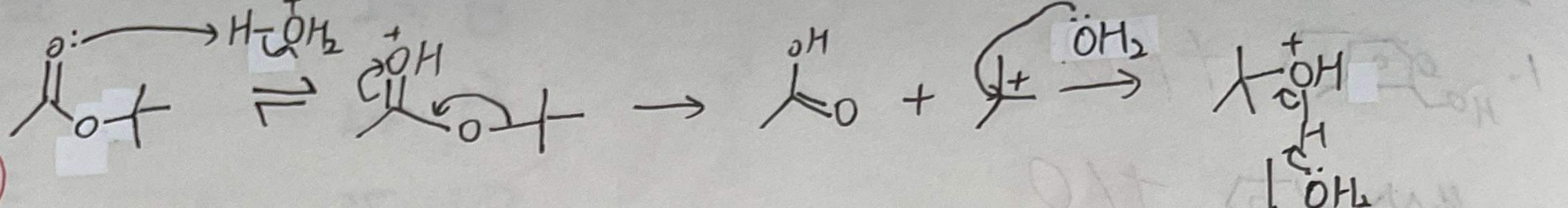
10. 

+0

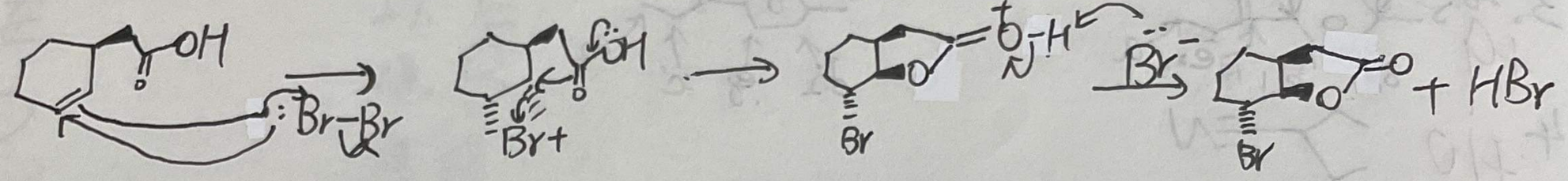
11. ∵ when triethylamine used as nucleophile, it doesn't have any proton to be removed then the +0 intermediate will be very reactive.

∴ the only one can be used as nucleophile is ethylamine ⇒ only one amide product

12.

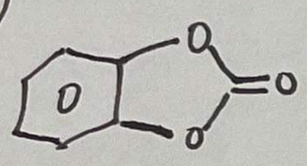


13.

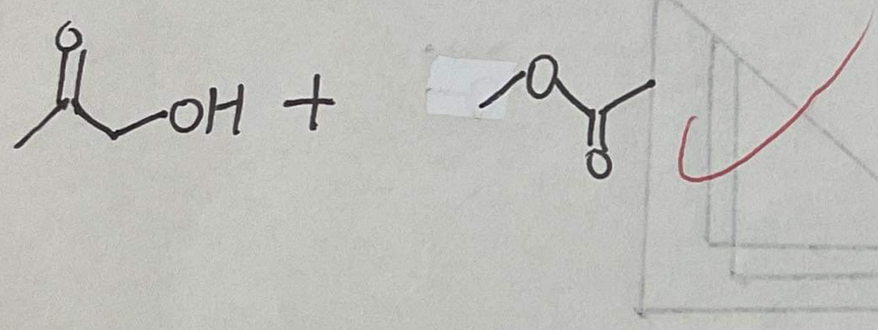


14.

(A)



(B)



15.