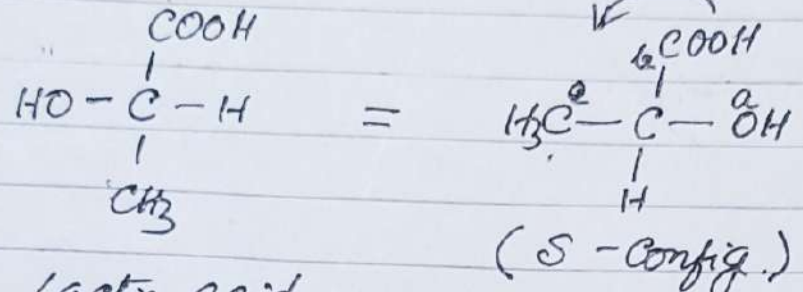
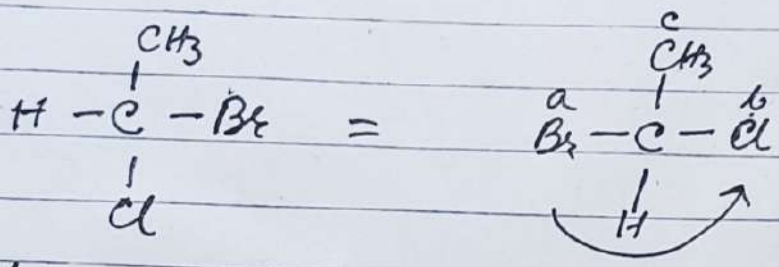
Assignment

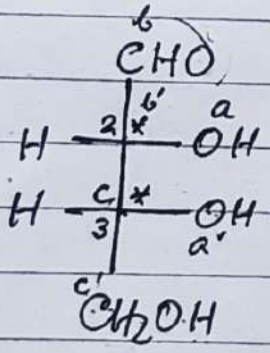
(A)

① 

Lactic acid.

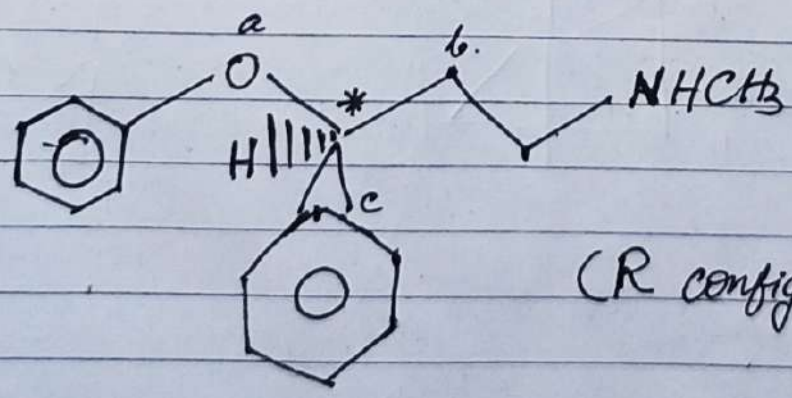
② 

1-Bromo-1-chloroethane (S-config)

③ 

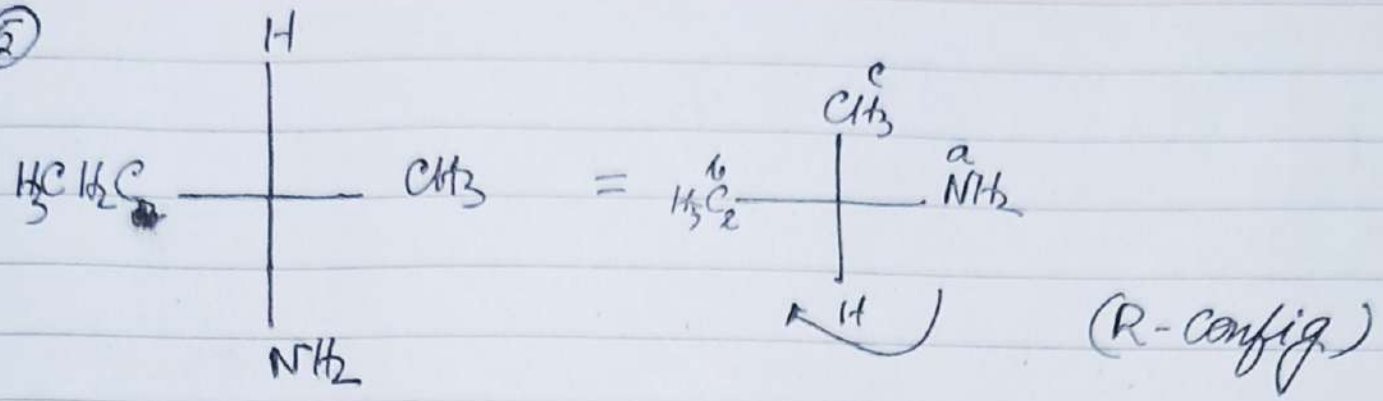
~~2R, 3R~~

(2R, 3R) config

④ 

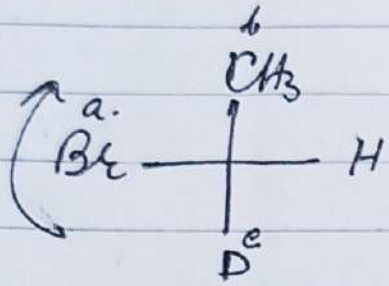
(R config)

⑤



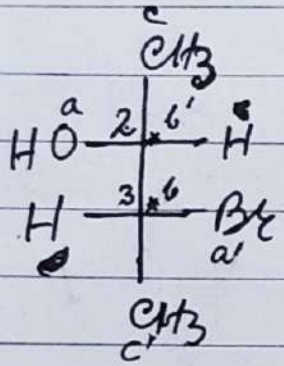
(R-config)

⑥



(S-config)

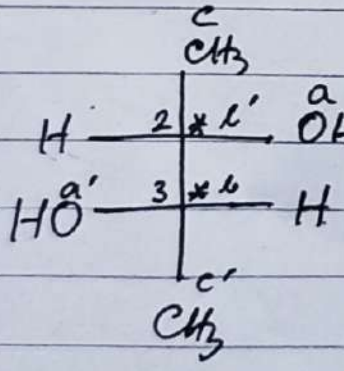
⑦



~~2-R 3-R~~

2R, 3R config.

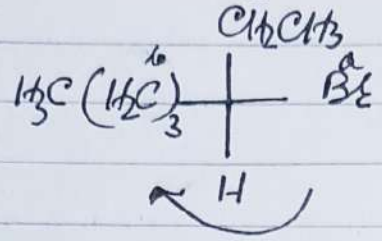
⑧



~~2-S 3-S~~

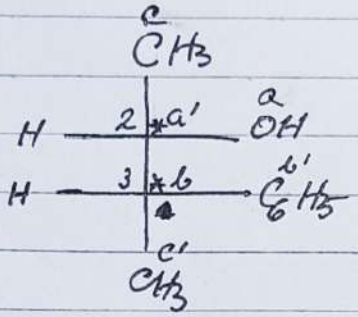
(2S, 3S) config.

(9)



(R - config)

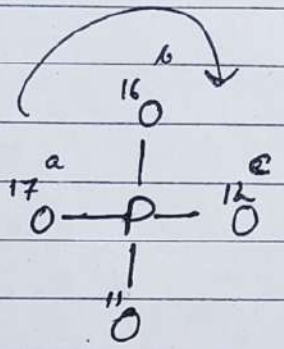
(10)



~~2-S 3-S~~

(2S, 3S) config.

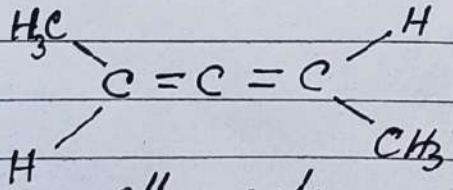
(11)



(R-config.)

It is optically active compound as the phosphorous centre is chiral in nature.

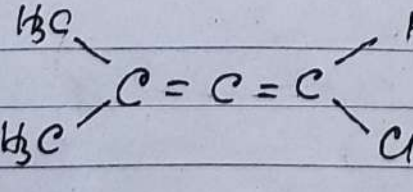
(12)



allene system

∵ there exists no internal mirror plane, so the compound is optically active. ~~compou~~

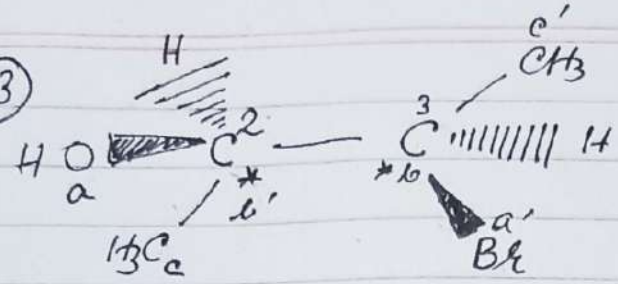
12(a)



∵ there exists an internal mirror plane containing =C=C< H / CH3 that will reflect the image of CH3 > C < group.

So optically inactive compound.

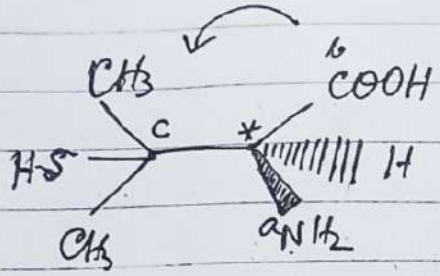
(13)



~~2-R 3-R~~

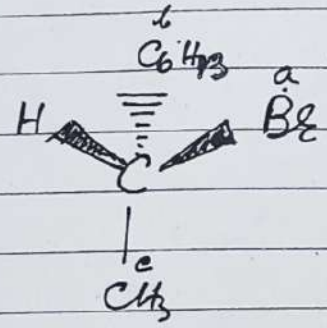
(2R, 3R) config.

(14)



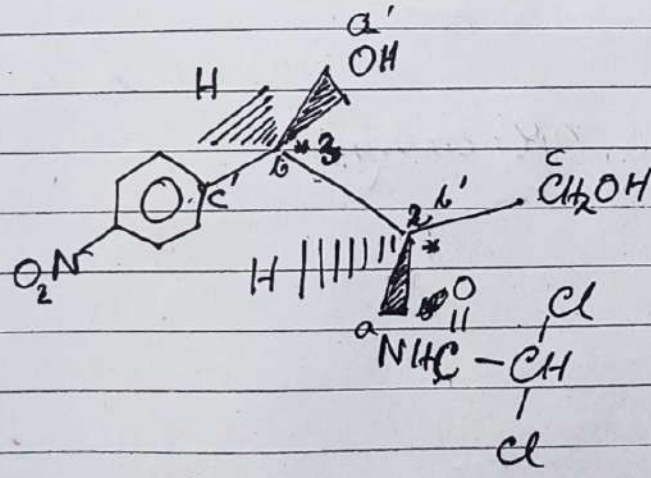
(S - config.)

(15)



(R - config)

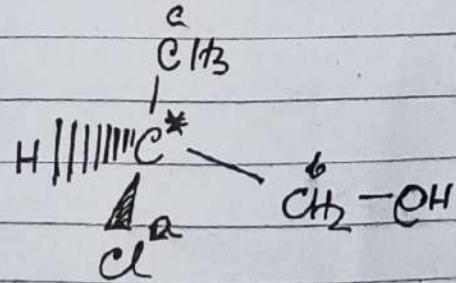
(16)



~~2-R 3-R~~

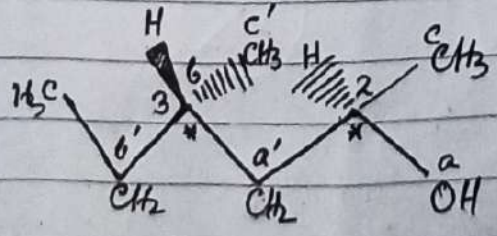
(2R, 3R) config.

(17)



(S - config)

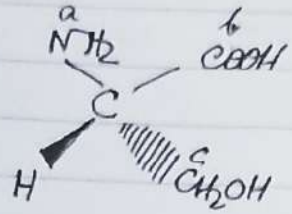
(18)



~~2 R 3-S~~

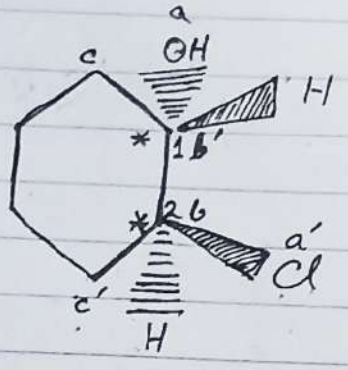
(2R, 3S) config.

(19)



(S - config)

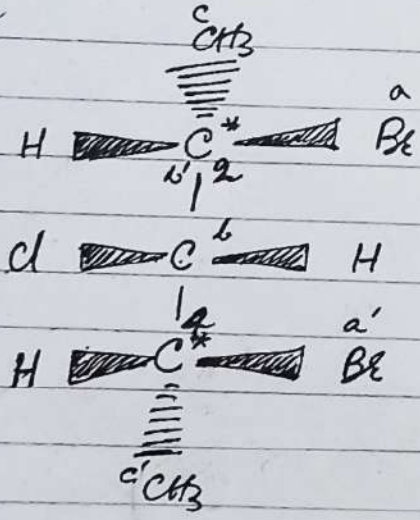
(20)



~~1-S 2-S~~

(1S, 2S) config.

(21)

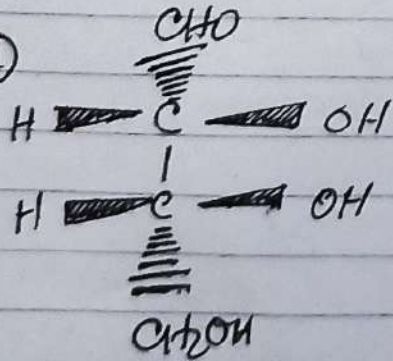


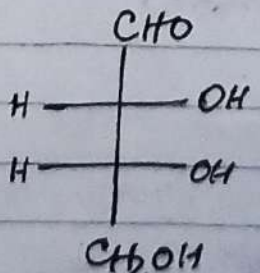
~~2-S 4-R~~

(2S, 4R) config.

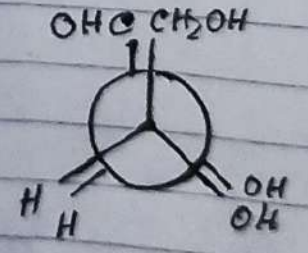
(B) Inter-conversion of Fischer - Sawhorse - Newmann

(1)

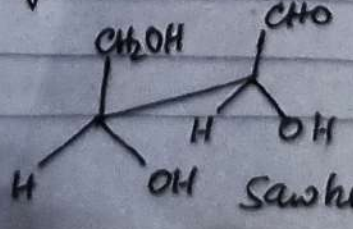




Fischer Projection

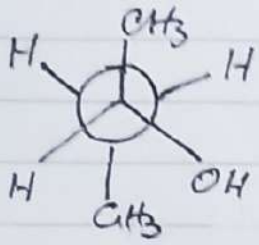


Newmann's Projection



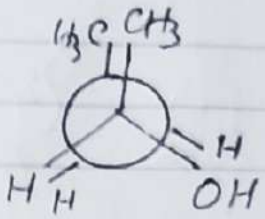
Sawhorse projection.

(2)

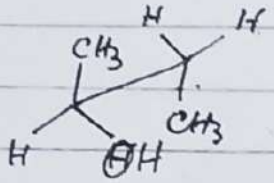


Staggered.

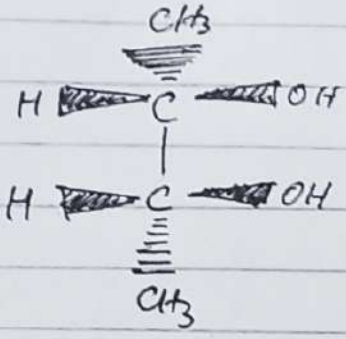
Rotating back carbon atom central bond by 180°



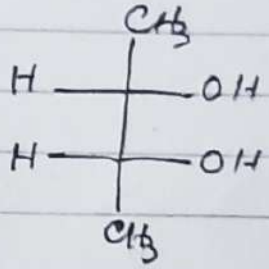
eclipsed



Sawhorse projection.

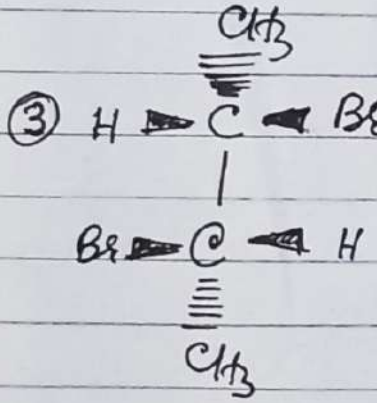


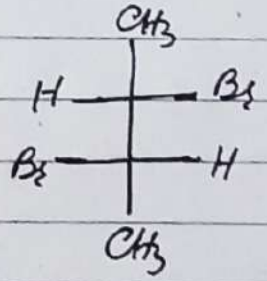
wedge-dash Projection.



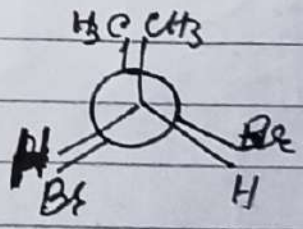
Fischer projection

(3)

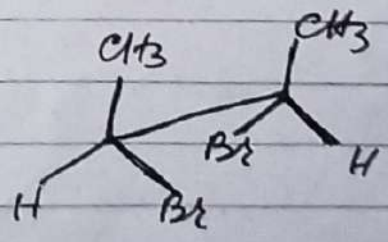




Fischer Projection

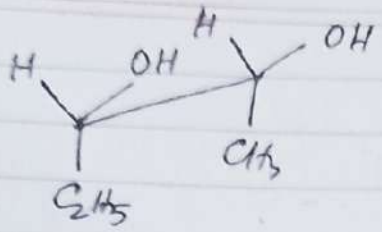


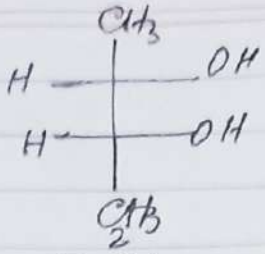
Newman's projection



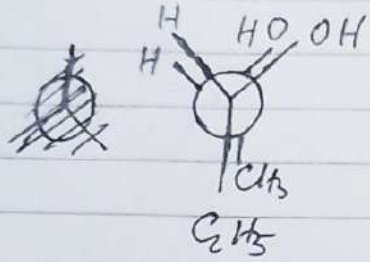
Sawhorse projection

④

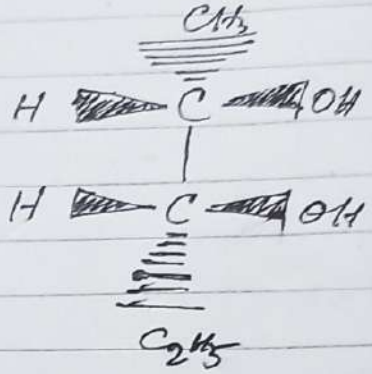




Fischer projection



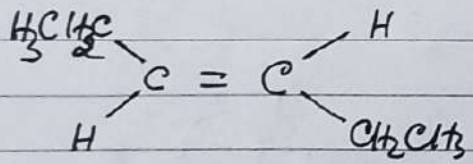
Newmann Projection



wedge - dash projection.

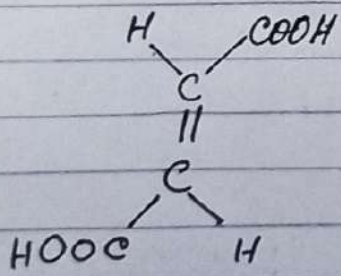
⑤ → E-Z Geometrical isomers.

trans cis

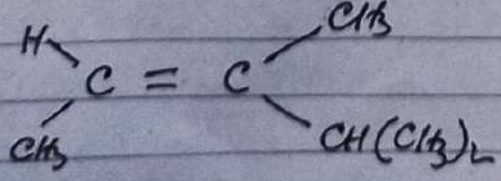
① 

~~E config~~ (Trans)

~~(Trans)~~

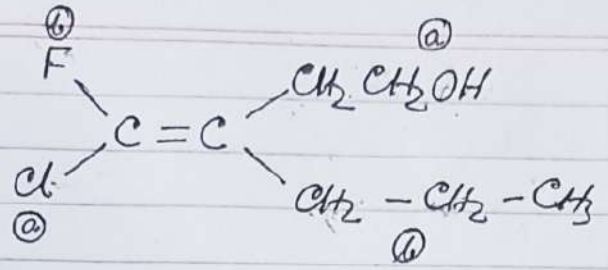
② 

(Trans.)

③ 

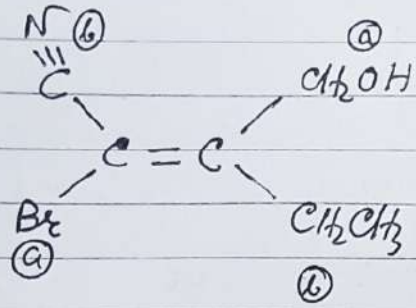
(Trans)

④



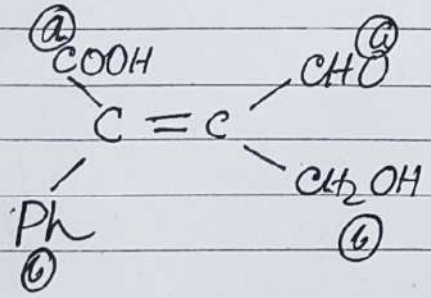
E config.
(∵ larger groups Cl & CH_2CH_2OH are opposite sides.)

⑤



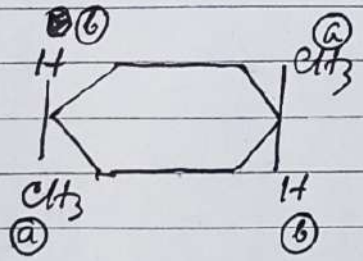
E - config. (4)

⑥



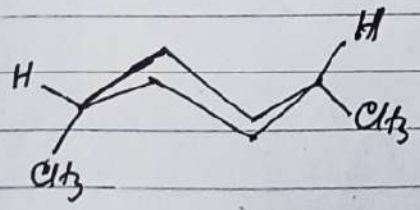
Z - config.

⑦



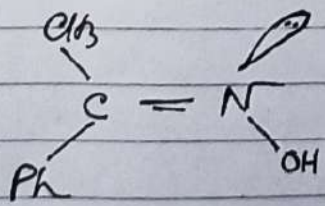
E config. (∵ both large groups are in opposite directions)

⑧



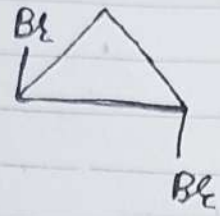
Z config (∵ both large groups are in same direction)

⑨



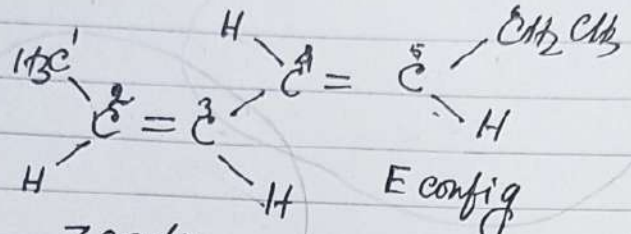
Z config. (∵ both OH and Ph are on same direction)

(10)



E - config

(11)

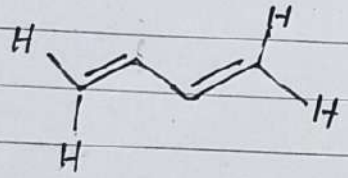


Z config

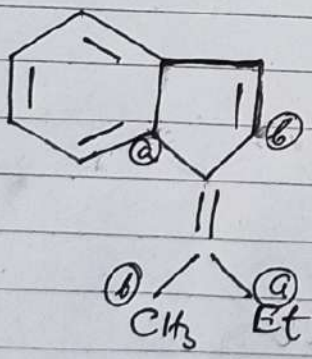
E config

(2Z, 4E) config.

(12)

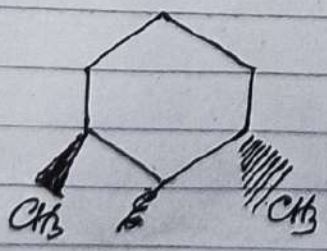


(13)



E - config

(14)



E config.

Z - config.