

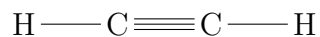
Chapter 18 & 22 – Problem Set 1 & 2

Michael Brodskiy

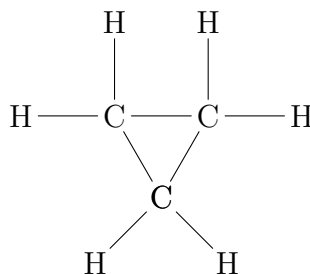
Instructor: Mr. Morgan

April 30, 2020

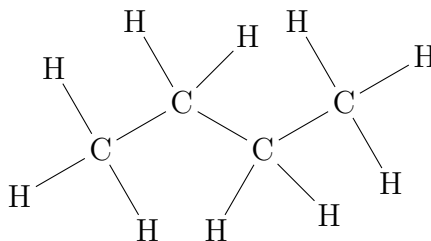
1. (a) Ether (d) Acid (g) Aldehyde
(b) Acid (top right) & Alcohol (bottom right) (e) Aldehyde (h) Alcohol
(c) Ketone (f) Ester (i) Halide
2. (a) Alkyne (Triple Bond)



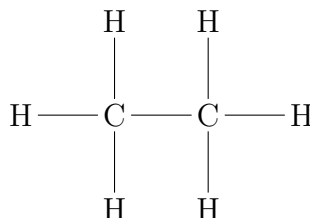
- (b) Alkane (Single Bond)



- (c) Alkane (Single Bond)



- (d) Alkane (Single Bond)



3. (a) ${}_{11}^{22}\text{Na} \longrightarrow {}_1^0\text{e} + {}_{10}^{22}\text{Ne}$ (d) ${}_{92}^{235}\text{U} + {}_0^1\text{n} \longrightarrow {}_{56}^{139}\text{Ba} + {}_{36}^{94}\text{Kr} + 3{}_0^1\text{n}$
 (b) ${}_{15}^{32}\text{P} \longrightarrow {}_{-1}^0\text{e} + {}_{16}^{32}\text{S}$ (e) ${}_{90}^{230}\text{Th} \longrightarrow {}_2^4\text{He} + {}_{88}^{226}\text{Ra}$
 (c) ${}_{92}^{238}\text{U} \longrightarrow {}_{90}^{234}\text{Th} + {}_2^4\text{He}$ (f) ${}_{27}^{60}\text{Co} \longrightarrow {}_{28}^{60}\text{Ni} + {}_{-1}^0\text{e}$
4. (a) ${}_{84}^{210}\text{Po} \longrightarrow {}_2^4\text{He} + {}_1^0\text{e} + {}_{81}^{206}\text{Tl}$
 (b) ${}_{93}^{237}\text{Np} \longrightarrow 4{}_1^0\text{e} + {}_{97}^{237}\text{Bk}$ OR ${}_{93}^{237}\text{Np} \longrightarrow 4{}_1^0\text{e} + {}_{89}^{237}\text{Ac}$
 (c) ${}_{90}^{230}\text{Th} \longrightarrow 2{}_2^4\text{He} + 3{}_1^0\text{e} + {}_{83}^{222}\text{Bi}$
 (d) ${}_{92}^{238}\text{U} \longrightarrow 4{}_0^0\gamma + 3{}_0^1\text{n} + {}_{92}^{235}\text{U}$
 (e) ${}_1^3\text{H} \longrightarrow {}_{-1}^0\text{e} + {}_2^3\text{He}$ OR ${}_1^3\text{H} \longrightarrow {}_1^0\text{e} + 3{}_0^1\text{n}$
 (f) ${}_{27}^{60}\text{Co} \longrightarrow 2{}_1^0\text{e} + 5{}_1^0\text{e} + {}_{24}^{60}\text{Cr}$ OR ${}_{27}^{60}\text{Co} \longrightarrow 7{}_1^0\text{e} + {}_{20}^{60}\text{Ca}$
 (g) ${}_{42}^{99} \longrightarrow 5{}_2^4\text{He} + {}_{32}^{79}\text{Ge}$
 (h) ${}_{15}^{32}\text{P} \longrightarrow 2{}_2^4\text{He} + 2{}_1^0\text{e} + 3{}_0^1\text{n} + {}_{13}^{21}\text{Al}$ OR ${}_{15}^{32}\text{P} \longrightarrow 2{}_2^4\text{He} + 2{}_1^0\text{e} + 3{}_0^1\text{n} + {}_9^{21}\text{F}$