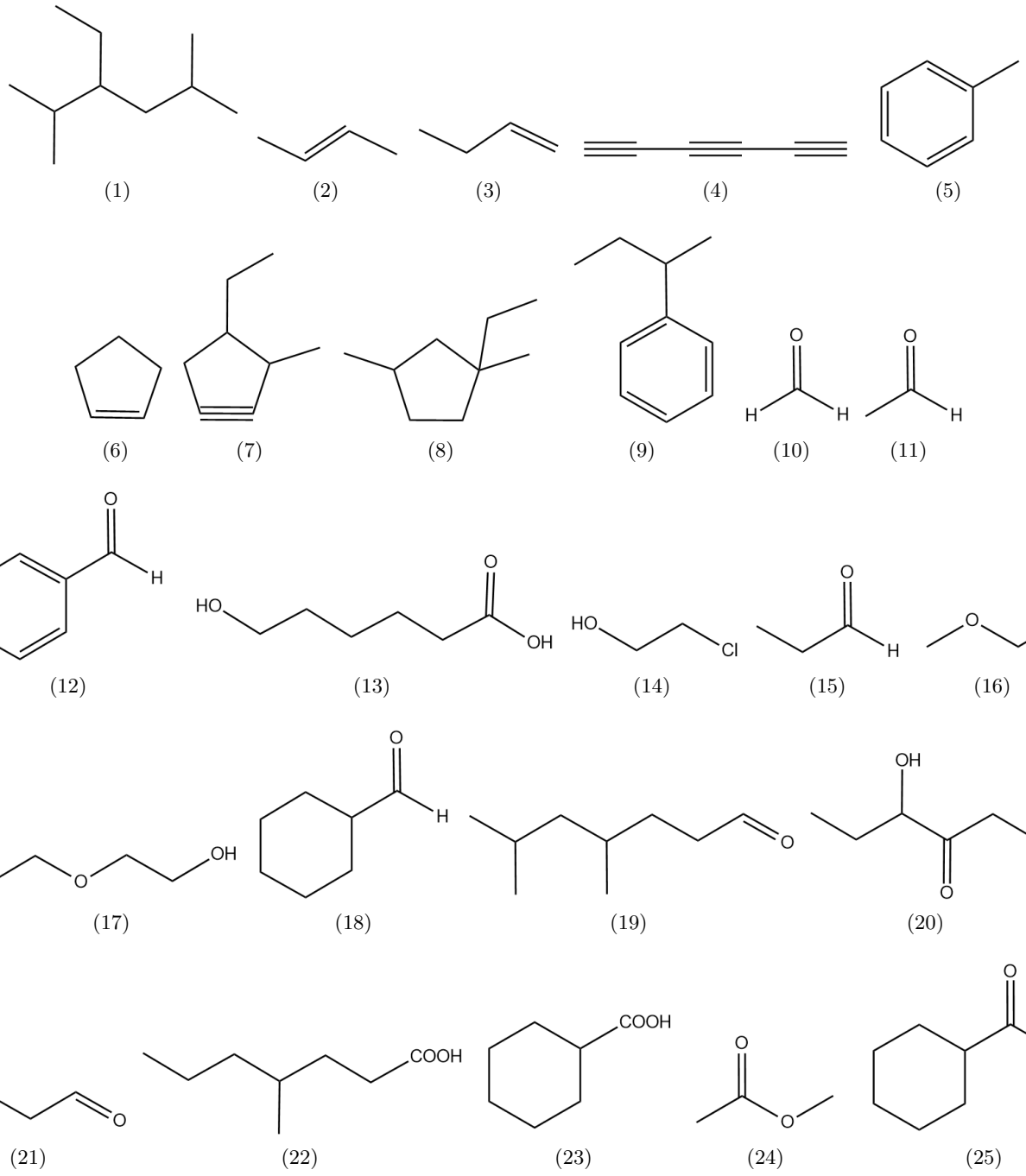
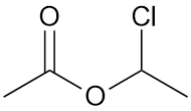
TD M1 – Représentation et nomenclature des molécules organiques

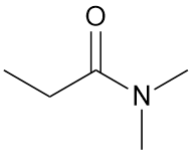
Exercice 1: Nommer des molécules ■■□□

Nommer les molécules suivantes :

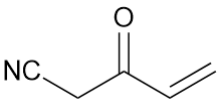




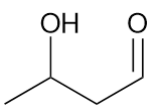
(26)



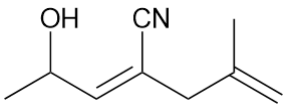
(27)



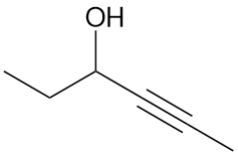
(28)



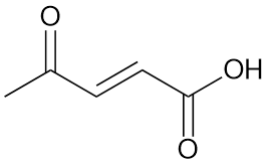
(29)



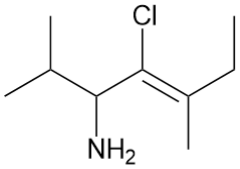
(30)



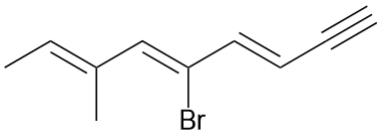
(31)



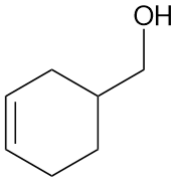
(32)



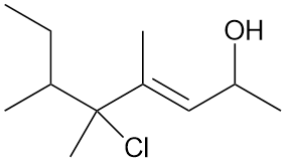
(33)



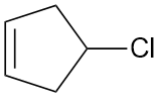
(34)



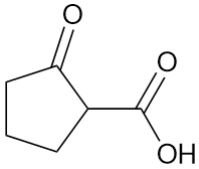
(35)



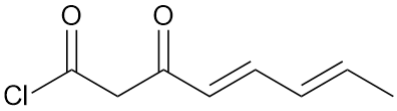
(36)



(37)



(38)



(39)

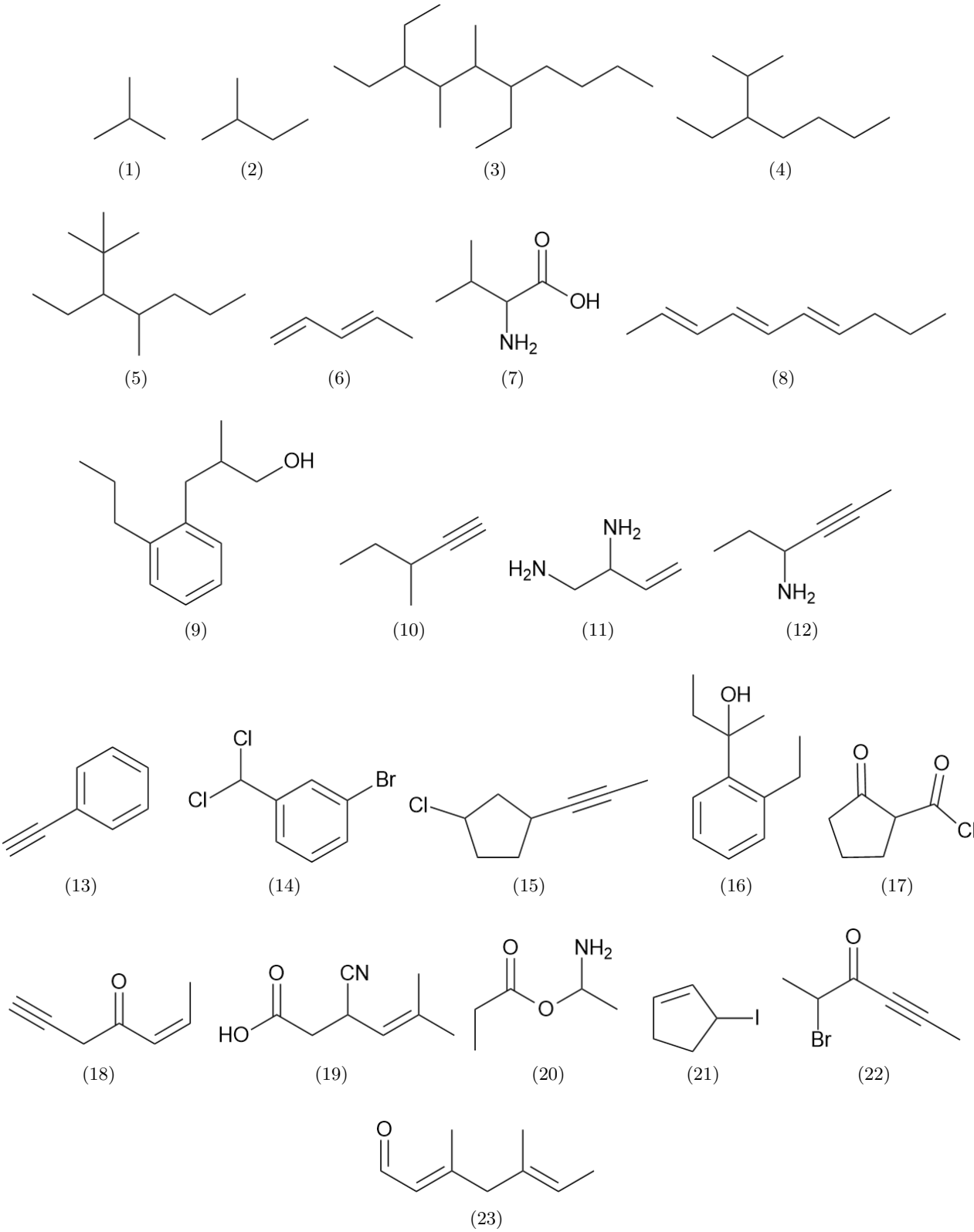
1) 3-ethyl-2,5-dimethylhexane
2) but-2-ène
3) but-1-ène
4) hex-1,3,5-triyne
5) methylbenzène
6) cyclopentène
7) 3-ethyl-2-methylcyclopentyne
8) 1-ethyl-1,3-dimethylcyclopentane
9) 2-phenylbutane
10) méthanal
11) éthanal
12) phénylméthanal
13) acide 6-hydroxyhexanoïque
14) 2-chloroéthanol
15) propanal
16) methoxyéthane ou éthoxymethane
17) 2-ethoxyéthanol
18) cyclohexylméthanal
19) 4,6-dimethylheptanal
20) 4-hydroxyhexan-3-one
21) 3-oxobutanal
22) acide 4-methylheptanoïque
23) acide cyclohexylmethanoïque
24) éthanoate de méthyle

25) cyclohexylméthanoate de méthyle
26) Ethanoate de 1-chloroéthyle
27) N,N diméthylpropanamide
28) 2-oxobut-3-ènenitrile
29) 3-hydroxybutanal
30) 2-hydroxy-6-méthylhept-3,6-dièn-4-nitrile
31) hex-4-yn-3-ol
32) acide 4-oxopent-2-ènoïque
33) 4-chloro-2,5-dméthylhept-4-ène-3-amine
34) 5-bromo-7-methylnon-3,5,7-trièn-1-yne
35) cyclohex-3'-ènylméthanol
36) 5-chloro-4,5,6-triméthyloct-3-ène-2-ol
37) 1-chlorocyclopent-3-ène
38) acide 2'oxocyclopentylméthanoïque
39) Chlorure de 3-oxooct-4,6-diènoyle

Exercice 2: Représenter des molécules ■■□□

Donner les représentations développées, semi-développées et topologiques des molécules suivantes :

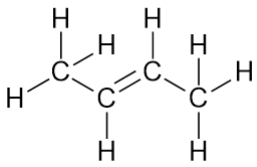
1) Méthylpropane
2) 2-méthylbutane
3) 3,6-diéthyl-4,5-diméthyldécane
4) 3-isopropylheptane
5) 3-tertiobutyl-4-methylheptane
6) penta-1,3-diène
7) Acide 2-amino-3-méthylbutanoïque
8) déca-2,4,6-triène
9) 2-méthyl-3-(2'-propylphényl)propan-1-ol
10) 3-méthylpent-1-yne
11) but-3-ène-1,2-diamine
12) hex-4-yn-3-amine
13) phényléthyne
14) (3'-bromophenyl)dichlorométhane
15) 1-chloro-3-(prop-1'-ynyl)cyclopentane
16) 2-(2'-ethylphényl)butan-2-ol
17) Chlorure de 2'oxocyclopentanméthanoyle
18) Hept-1-yn-5-èn-4-one
19) Acide 3-cyano-5-methylhex-4-enoïque
20) Propanoate de 1-aminoéthyle
21) Iodocyclopent-2-ène
22) 2-bromohex-4-yn-3-one
23) 3,5-diméthylhept-2,5-dièn al



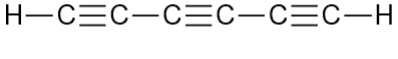
Exercice 3: Passer d'une représentation à une autre ■■□□

1) Pour chacune des molécules 2, 4, 5, 6, 11, 13 et 23 de l'exercice 1, proposer les représentations développées et semi-développées.

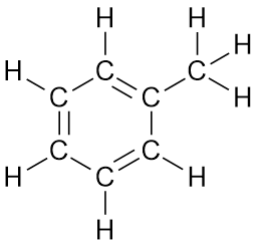
Les formules développées :



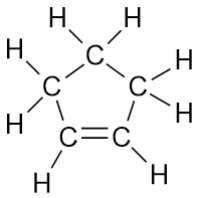
(1)



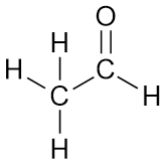
(2)



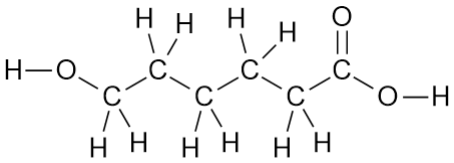
(3)



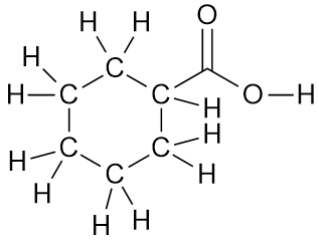
(4)



(5)

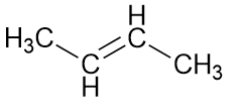


(6)

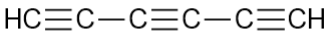


(7)

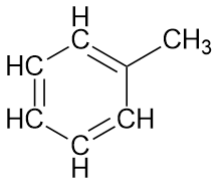
Les formules semi-développées :



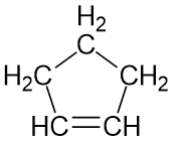
(1)



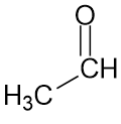
(2)



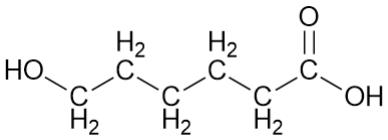
(3)



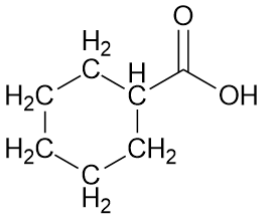
(4)



(5)

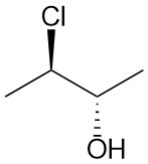


(6)

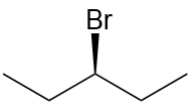


(7)

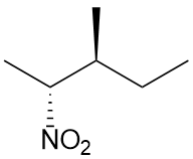
2) Pour les molécules ci-dessous, donner la représentation de Newman selon la liaison C_2-C_3.



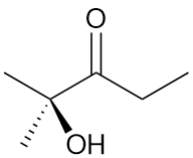
(1)



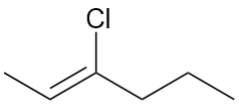
(2)



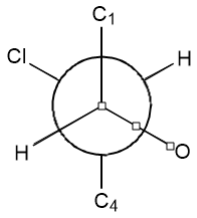
(3)



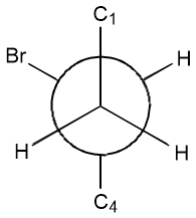
(4)



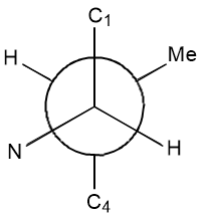
(5)



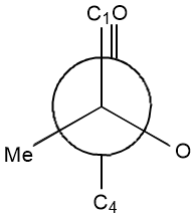
(1)



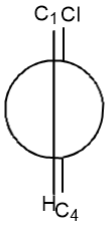
(2)



(3)



(4)



(5)