ROSEDALE
ACADEMY

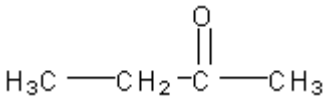
Name:

SCH4U Unit 2 - Practice Questions B

1. Match the organic compound class name to the structural formula below. *[A, 6: 0.5 each]*

i.

ii



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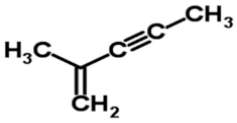

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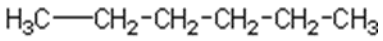

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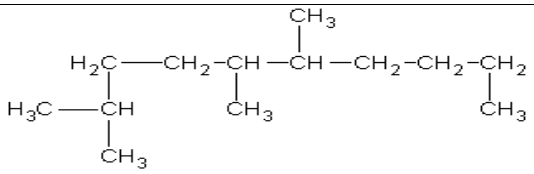

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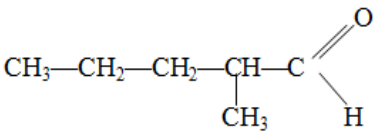
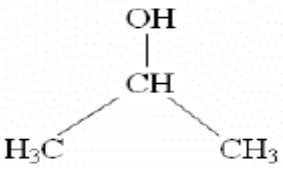
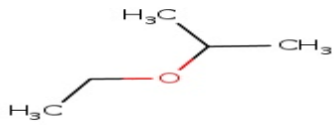


vii.

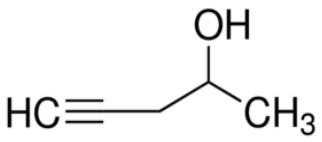
viii



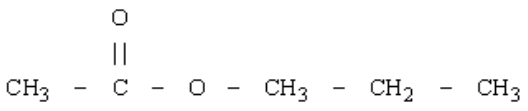
ix.



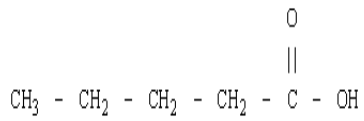
x



xi.



xii

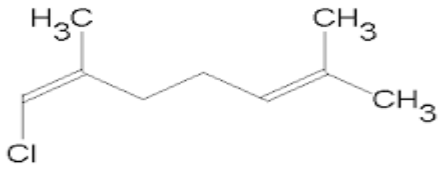


A) 4-pentyn-2-ol
B) propyl ethanoate
C) 2-methyl-1-penten-3-yne
D) Propan-2-ol
E) 2, 5, 6-trimethyl decane
F) hexane
G) butanone
H) 1-pentanoic acid
I) ethoxy propane
J) 2-methylpentanal
K) 1,3-cyclopentadiene
L) dec-5-yne

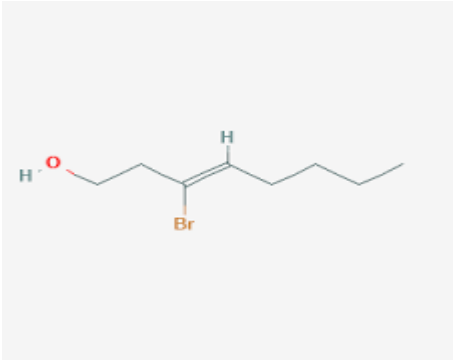
Name:

2. Name the following compounds. *[A, 8; 2 each]*

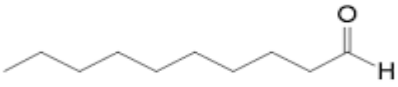
(a)



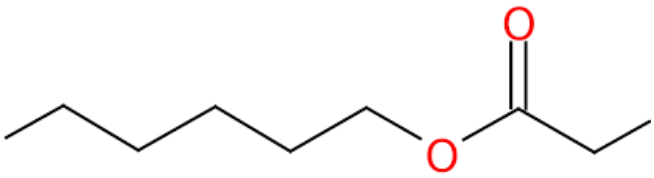
(b)



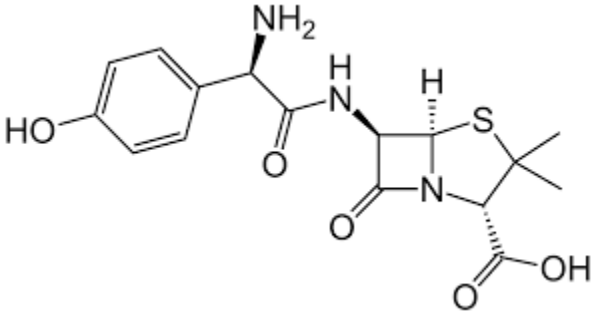
(c)



(d)



3. The structure below is an antibiotic called Amoxicillin. **Circle and name** 2 <u>different functional groups</u> in Amoxicillin. *[A, 2; 1 each]*



SECTION 2: Drawing

4. Complete the following table.
   a) Draw two alcohols with the molecular formula $C_5H_{12}O$. *[T/I, 4: 2 each]*
   b) State the name of the alcohol. *[A, 2: 1 each]*

Name of Alcohol		
Structural Formula		

5. Draw the structural formula for the following organic compounds: *[T/I, 8: 2 each]*

(a) 4-propyl-2-heptyne *[T/I, 2]*

(b) 4-aminopentanoic acid *[T/I, 2]*

(c) 2-ethyl-2-hexanol *[T/I, 2]*

(d) 2,3-diethyl hexanal *[T/I, 2]*

SECTION 3: Long Answer

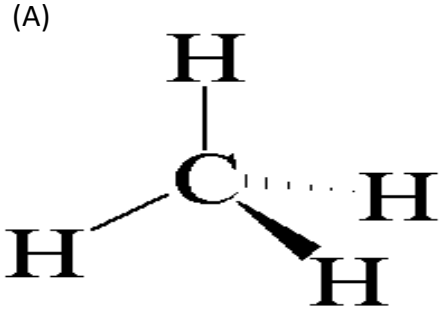
The following questions will be graded according to the following rubric:

Criteria	Level 4	Level 3	Level 2	Level 1
APPLICATION Making connections between science, technology, society, and environment	makes connections between science, technology, society, and the environment with a high degree of effectiveness **(3 marks)**	makes connections between science, technology, society, and the environment with considerable effectiveness **(2 marks)**	makes connections between science, technology, society, and the environment with some effectiveness **(1 mark)**	makes connections between science, technology, society, and the environment with limited effectiveness **(0 - 0.5 mark)**
COMMUNICATION Information and ideas are communicated with complete and correct answers	Information and ideas are communicated clearly and precisely **(2 mark)**	Information and ideas are communicated with considerable clarity and precision **(0.1 marks)**	Information and ideas are communicated with some clarity and precision **(0.5 marks)**	Information and ideas are communicated limited clarity and precision **(0 marks)**

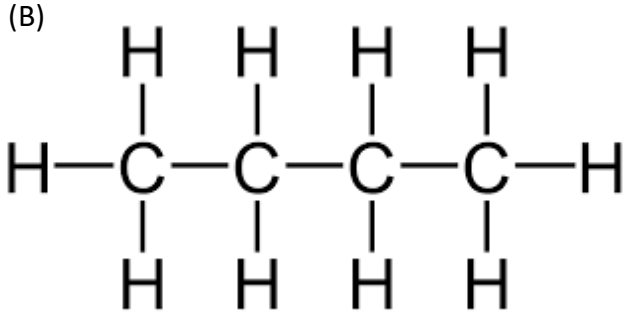
6. Butane is commonly found in lighters, while methane is a greenhouse gas that is locked in permafrost.

[A, 3; C, 2]

(A)



(B)



Identify which structural formula is methane and butane. How are they related structurally? Which one would you think is used in lighters? Which one do you think is a gas? Give reasons for your answer.

7. Explain which compound in each of the following pair will have the higher ***boiling point***.

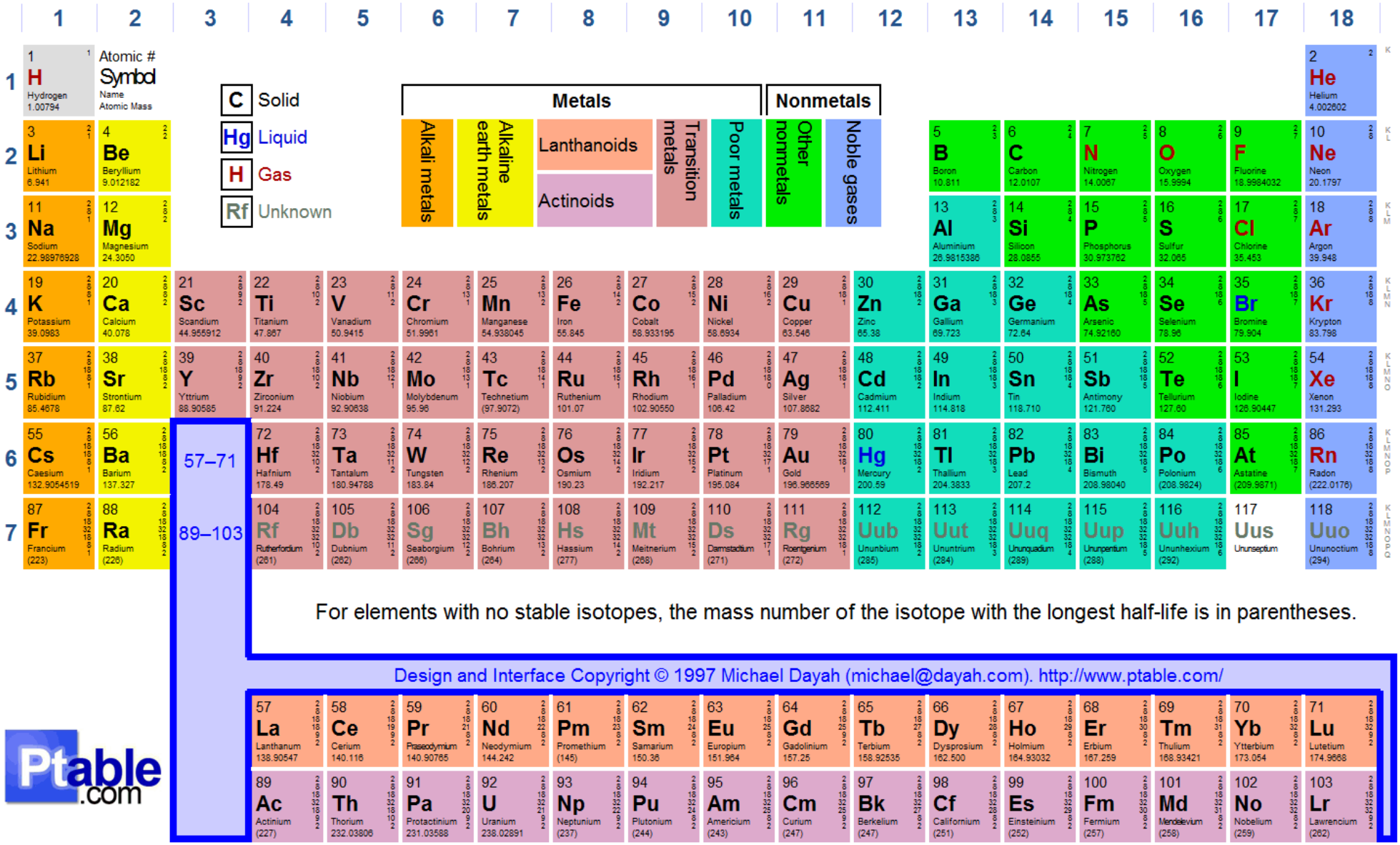
[A, 3; C, 2]

pentane or heptanol

REFERENCE RESOURCES:

Names of the first 10 alkanes

# of Carbon atoms	Name	Molecular Formula
1	methane	CH_4
2	ethane	C_2H_6
3	propane	C_3H_8
4	butane	C_4H_{10}
5	pentane	C_5H_{12}
6	hexane	C_6H_{14}
7	heptane	C_7H_{16}
8	octane	C_8H_{18}
9	nonane	C_9H_{20}
10	decane	$C_{10}H_{22}$


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
Atomic #
Symbol
Name
Atomic Mass
C Solid
Hg Liquid
H Gas
Rf Unknown
Metals
Nonmetals
Alkali metals
Alkaline earth metals
Lanthanoids
Actinoids
Transition metals
Poor metals
Other nonmetals
Noble gases
1 H Hydrogen 1.00794
2 He Helium 4.002602
3 Li Lithium 6.941
4 Be Beryllium 9.012182
5 B Boron 10.811
6 C Carbon 12.0107
7 N Nitrogen 14.0067
8 O Oxygen 15.9994
9 F Fluorine 18.9984032
10 Ne Neon 20.1797
11 Na Sodium 22.98976928
12 Mg Magnesium 24.3050
13 Al Aluminium 26.9815386
14 Si Silicon 28.0855
15 P Phosphorus 30.973762
16 S Sulfur 32.065
17 Cl Chlorine 35.453
18 Ar Argon 39.948
19 K Potassium 39.0983
20 Ca Calcium 40.078
21 Sc Scandium 44.955912
22 Ti Titanium 47.867
23 V Vanadium 50.9415
24 Cr Chromium 51.9961
25 Mn Manganese 54.938045
26 Fe Iron 55.845
27 Co Cobalt 58.933195
28 Ni Nickel 58.6934
29 Cu Copper 63.546
30 Zn Zinc 65.38
31 Ga Gallium 69.723
32 Ge Germanium 72.64
33 As Arsenic 74.92160
34 Se Selenium 78.96
35 Br Bromine 79.904
36 Kr Krypton 83.798
37 Rb Rubidium 85.4678
38 Sr Strontium 87.62
39 Y Yttrium 88.90585
40 Zr Zirconium 91.224
41 Nb Niobium 92.90638
42 Mo Molybdenum 95.96
43 Tc Technetium (97.9072)
44 Ru Ruthenium 101.07
45 Rh Rhodium 102.90550
46 Pd Palladium 106.42
47 Ag Silver 107.8682
48 Cd Cadmium 112.411
49 In Indium 114.818
50 Sn Tin 118.710
51 Sb Antimony 121.760
52 Te Tellurium 127.60
53 I Iodine 126.90447
54 Xe Xenon 131.293
55 Cs Caesium 132.9054519
56 Ba Barium 137.327
57–71
72 Hf Hafnium 178.49
73 Ta Tantalum 180.94788
74 W Tungsten 183.84
75 Re Rhenium 186.207
76 Os Osmium 190.23
77 Ir Iridium 192.217
78 Pt Platinum 195.084
79 Au Gold 196.966569
80 Hg Mercury 200.59
81 Tl Thallium 204.3833
82 Pb Lead 207.2
83 Bi Bismuth 208.98040
84 Po Polonium (208.9824)
85 At Astatine (209.9871)
86 Rn Radon (222.0176)
87 Fr Francium (223)
88 Ra Radium (226)
89–103
104 Rf Rutherfordium (261)
105 Db Dubnium (262)
106 Sg Seaborgium (266)
107 Bh Bohrium (264)
108 Hs Hassium (277)
109 Mt Meitnerium (268)
110 Ds Darmstadtium (271)
111 Rg Roentgenium (272)
112 Uub Ununbium (285)
113 Uut Ununtrium (284)
114 Uuq Ununquadium (289)
115 Uup Ununpentium (288)
116 Uuh Ununhexium (292)
117 Uus Ununseptium
118 Uuo Ununoctium (294)
57 La Lanthanum 138.90547
58 Ce Cerium 140.116
59 Pr Praseodymium 140.90765
60 Nd Neodymium 144.242
61 Pm Promethium (145)
62 Sm Samarium 150.36
63 Eu Europium 151.964
64 Gd Gadolinium 157.25
65 Tb Terbium 158.92535
66 Dy Dysprosium 162.500
67 Ho Holmium 164.93032
68 Er Erbium 167.259
69 Tm Thulium 168.93421
70 Yb Ytterbium 173.054
71 Lu Lutetium 174.9668
89 Ac Actinium (227)
90 Th Thorium 232.03806
91 Pa Protactinium 231.03588
92 U Uranium 238.02891
93 Np Neptunium (237)
94 Pu Plutonium (244)
95 Am Americium (243)
96 Cm Curium (247)
97 Bk Berkelium (247)
98 Cf Californium (251)
99 Es Einsteinium (252)
100 Fm Fermium (257)
101 Md Mendelevium (258)
102 No Nobelium (259)
103 Lr Lawrencium (262)
For elements with no stable isotopes, the mass number of the isotope with the longest half-life is in parentheses.
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