KEY

Organic Review

Name - _____

1.) Name the following molecules.

(a) 2–fluoropentane
(b) 3–chloro–3–hexene
(c) 1,4–diiodo–2–butyne
(d) pentyl methanoate
(e) 3–bromo–2,5,5–trimethyloctane
(f) 1,3–dichlorocyclobutane
(g) 1–fluoro–4–propylbenzene
or 4–fluoro–1–propylbenzene
(h) 2,6–dimethyloctane
(i) 4–bromo–5–chloro–1–iodo–2–pentyne
(j) 4–iodo–2–butanol
(k) 3–methyl–1–cyclopentanol
(l) 1,3,5–triethylbenzene
(m) 3–bromo–1–propene
(n) pentyl ethanoate
(o) 2,4–dibromo–1–methylbenzene
(p) 1,2,3–trimethylcyclopropane
(q) cyclopropenol
(r) 1–chloro–2–ethylbenzene
or 2–chloro–1–ethylbenzene

2.) Draw the following molecules.

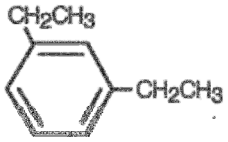
(a) $F–CH_2CH(OH)CH_2CF_2CH_3$

(b) $CH_3C{\equiv}CCHClCH_2CH_3$

(c) $CH_3CH_2CH_2CH_2COOCH_2CH_3$

(d) $CH_3CH_2CH(CH_3)CH(CH_3)CH_2CH_2CH_3$

(e) $CH_3CH_2C{\equiv}CCH_2CH_2CH_2CH_3$

(f) 

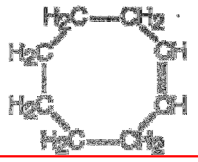
(g) $Br–CH_2CH_2C(Br)=CHCH_2CH_3$

(h) $CH_3CH_2C(CH_3)(CH_3CH_2)–C(CH_3)(CH_2CH_3)CH_2CH_3$

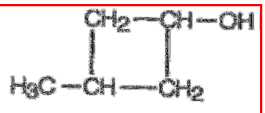
(i) $CH_3C(Cl)=C(Cl)CH_3$

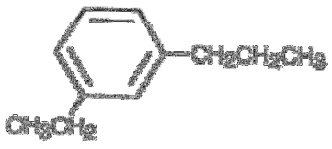
(j) $CH_3CH_2CH_2CH_2CH_2CH_2CH_2COOCH_3$

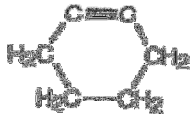
(k) $CH_2=C(I)–C(I)(CH_2CH_3)CHCH_2CH_3$, H_3C

(l) 

(m) $CH_3CH(CH_3)C{\equiv}CCH_2CH_2CH_3$

(n) 

(o) 

(p) 

(q) $CH_3CCH_2CH_3$, CH_3, OH

(r) $CH_3CBr_2CBr_2CH_3$

KEY

3.) A hydrocarbon has the formula C_NH_{2N-2}. Which of the following are possible?

(a) The compound is branched but has no multiple bonds or cyclic groups.
(b) The compound has a single double bond.
(c) The compound has a single triple bond.
(d) The compound has a single cyclic group.
(e) The compound has two double bonds.
(f) The compound has two triple bonds.
(g) The compound has two cyclic groups.
(h) The compound has a double bond and a triple bond.
(i) The compound has a double bond and a single cyclic group.
(j) The compound has a cyclic group and a triple bond.

C_NH_{2N+2} implies no loss of H's (no multiple bonds; no ring present which joins one end of a chain back onto itself).

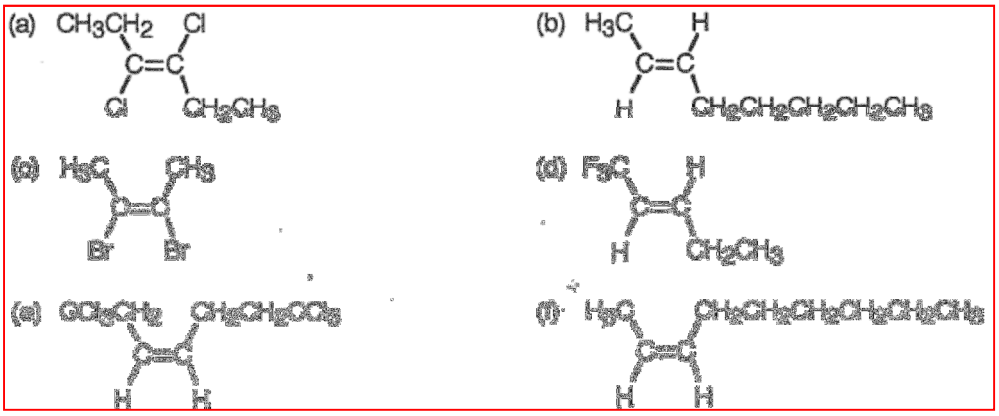
C_NH_{2N} implies the loss of 2 H's due to either a ring present **OR** a double bond.

C_NH_{2N-2} implies the loss of 4 H's due to either a triple bond **OR** two double bonds **OR** two rings present **OR** a double bond AND a ring present.

Answers: c, e, g, i

4.) Draw the following cis and trans isomers.

(a) trans–3,4–dichloro–3–hexene
(b) trans–2–octene
(c) cis–2,3–dibromo–2–butene
(d) trans–1,1,1–trifluoro–2–pentene
(e) cis–1,1,1,7,7,7–hexachloro–3–heptene
(f) cis–2–nonene



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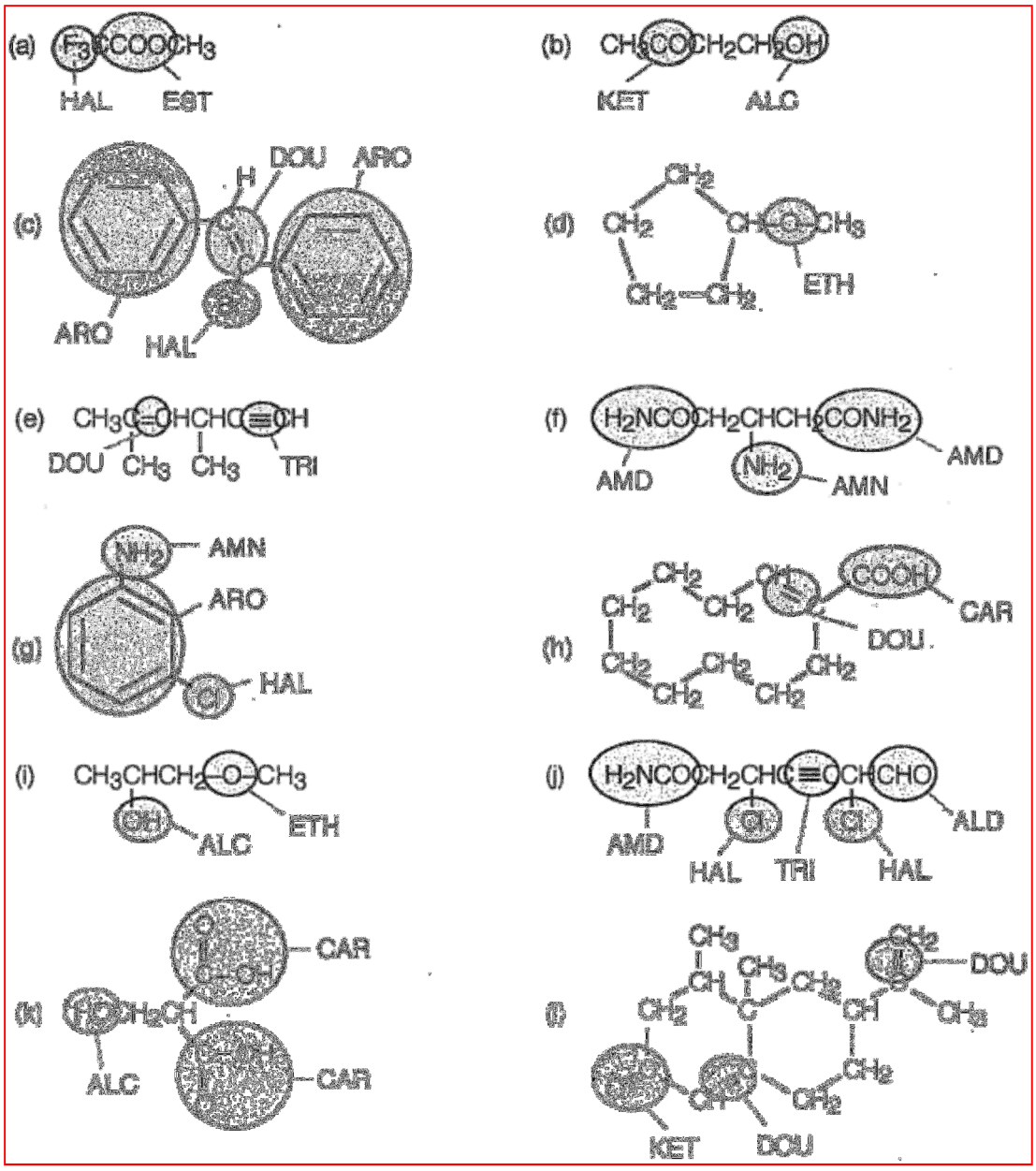
5.) Circle the functional groups and label each group as one of:

DOU = double bond, TRI = triple bond, ARO = aromatic ring, HAL = halide,
ALC = alcohol, ALD = aldehyde, KET = ketone, ETH = ether,
AMN = amine, AMD = amide, CAR = carboxylic acid, EST = ester.



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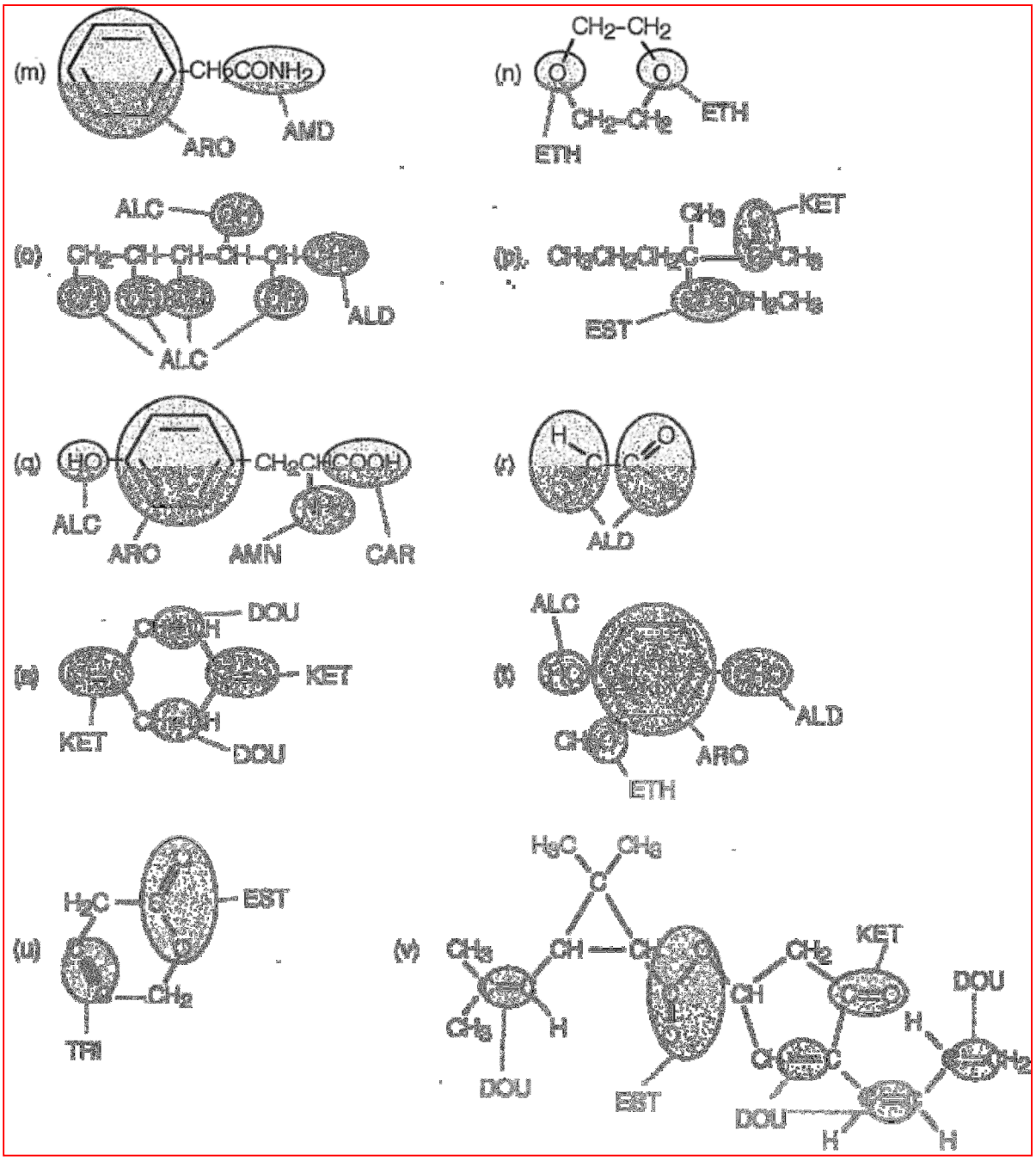
(m)
ARO
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