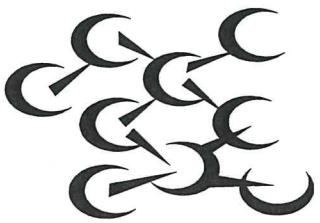
STAWA SET 24



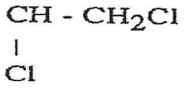
SET 24

1. Write systematic names for the following compounds:

(a) $H_3C - CH_2 - CH_2 - CH_2 - CH_3$

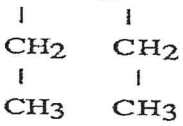
(b) $H_3CCH = CHCH_2CH_3$

(c)


(d)


(e)


(f)


(g)


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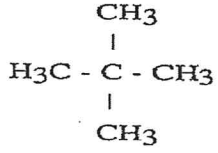
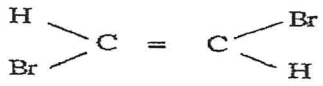


(i) $F_3CCH_2CH_2CH_2CH_3$

(j) $HC \equiv CCH_2CHBr_2$

(k)


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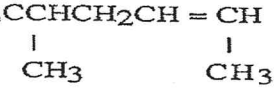
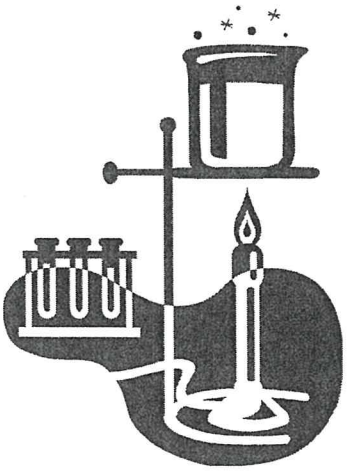




2. Draw structural formulae for the following:

(a) 2, 2, 4 - trimethylpentane

(b) dichlorodifluoromethane

(c) 3 - ethyl - 2 - methyl - 2 - pentene

(d) 4, 4 - diethyloctane

(e) 5, 5 - dichloro - 4 - methyl - 2 - hexyne

(f) *trans* - 3 - heptene

(g) 1, 1, - dichloro - ***cis*** - 2 - butene

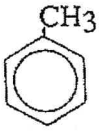
(h) 5 - ethyl - 3 - heptanone

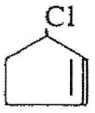
3. Draw structural formulae and write systematic names for

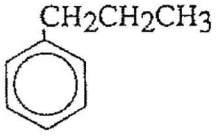
(a) all the isomers of
   (i) pentane
   (ii) pentene
   (iii) pentyne

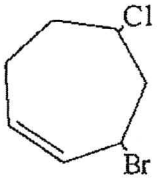
(b) four isomers of C_4H_9Br.

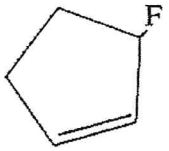
4. Write systematic names for the following compounds:

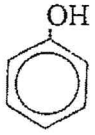
(a) 

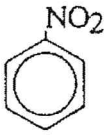
(b) 

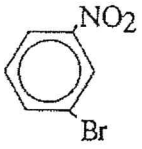
(c) 

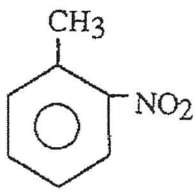
(d) 

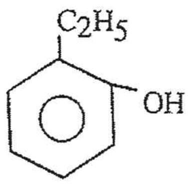
(e) 

(f) 

(g) 

(h) 

(i) 

(j) 

5. Draw structural formulae for the following:

(a) fluorocycloheptane

(b) 3 - methyl - cyclopentene

(c) butylbenzene

(d) 1, 2, - dinitrobenzene

(e) 1, 3 - dinitrobenzene

(f) 2, 4, 6, - trinitrotoluene ('TNT')

6. Write systematic names for the following compounds:

(a) $H_3CCH_2CH_2OH$

(b) H_3CCH_2CHO

(c)
```
CH3CHCH2CHCH2CH3
    |     |
   CH3    OH
```

(d)
```
CH3CCH2CH2CH3
    ||
    O
```

(e) $H_2C = O$

(f) $H_3CCH_2CH_2NH_2$

(g)
```
H3CCH2CH2CHCHO
  /       |
CH2       Cl
 |
CH3
```

(h)
```
        O
        ||
H3CCHCCH2CHCH3
   |      |
  CH3    CH3
```

(i) $H_3CCH_2CHCH_2NH_2$
 |
 CH_3

(j) $H_3CCHNH_2CH_3$

7. Draw the structural formulae for:

(a) 1 - pentanol
(b) 1, 2, 3, - propan-triol
(c) 4 - chloro - 4 - methyl - 1 - hexanol
(d) 3 - bromopropanol
(e) methanal
(f) butanone
(g) 6 - amino - 7 - bromo - 3 - heptanone
(h) 3 - methylbutanal
(i) 2 - ethyl - 1 - butanamine
(j) 5 - chloro - 3, 4 - dimethyl - 2 - pentanamine

8. Write systematic names for the following compounds:

(a) $H_3CCH_2CH_2C = O$
 |
 OH

(b) $ClCH_2CH_2C = O$
 |
 OH

(c) H_3CCH_2C - ONa
 ||
 O

(d) $H_3CCH_2CH_2CH_2C$ - OCH_3
 \\
 O

(e) H_2CCOCH_3
 ||
 O

(f) $H_3CCHCH_2C = O$
 | |
 CH_3 OH

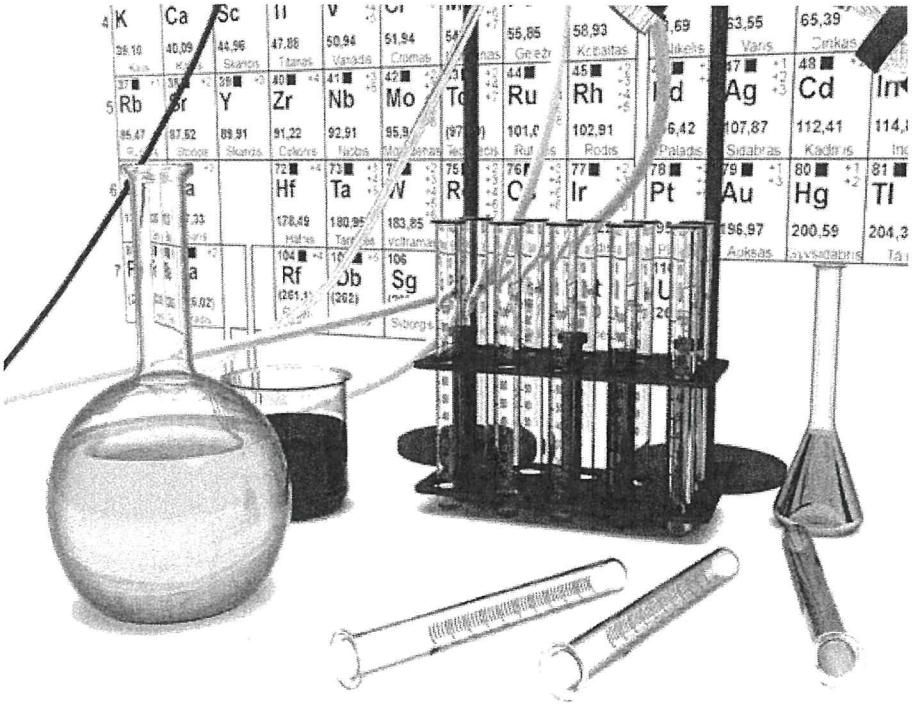
(g) $H_3CCH_2CNH_2$
 ||
 O

9. Draw the structural formulae for

(a) 2 - bromobutanoic acid
(b) heptanedioic acid
(c) methyl propanoate
(d) propyl methanoate
(e) potassium ethanoate
(f) ethan-dioic acid (oxalic acid)
(g) propanamide
(h) methanamide

10. Draw structural formulae and write systematic names for:

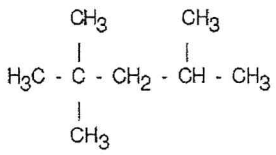
(a) all isomeric alcohols with formula C_4H_9OH
(b) one carboxylic acid and two esters with formula $C_4H_8O_2$
(c) two aldehydes and one ketone with formula C_4H_8O
(d) three isomers of dichlorobenzene
(e) Draw all the isomers of C_4H_8
(f) Draw all the isomers of $C_5H_{10}O$



Set 24 SOLUTIONS

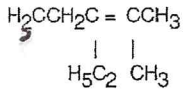
1. (a) pentane (b) 2-pentene
(c) 2 methylbutane (d) 1,1,2-trichloroethane
(e) 4-methyl-2-pentyne (f) 2-methyl-1-pentene
(g) 5-ethyl-3-methyloctane (h) dimethylpropane
(i) 1,1,1-trifluoropentane (j) 4,4-dibromo-1-butyne
(k) **trans**-1,2-dibromoethene (l) 5-methyl-2-hexene

2. (a)



(b) CCl_2F_2

(c)



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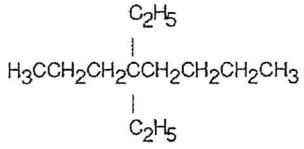

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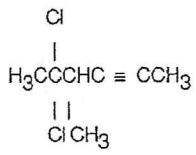

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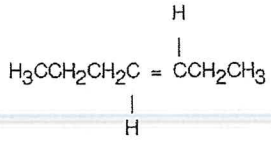

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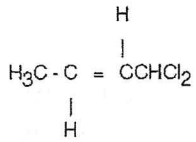

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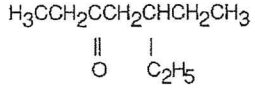
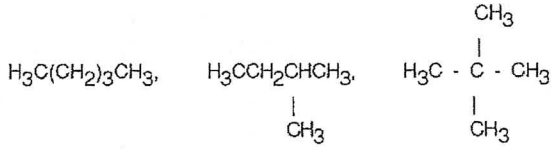
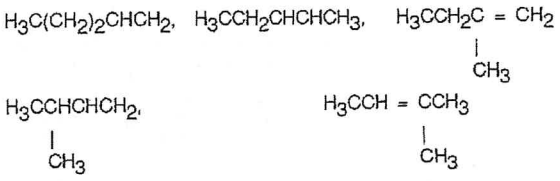


3. (a) (i)



(ii)



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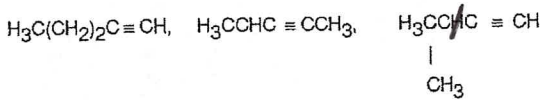

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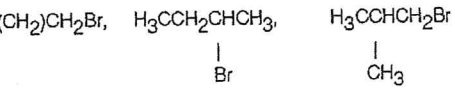
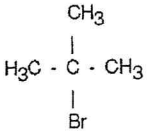
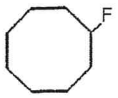


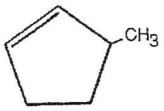


4. (a) methylbenzene
(b) 3-chlorocyclopentene
(c) propylbenzene
(d) 5-chloro-3-bromocyclopentene
(e) 3-fluorocyclopentene
(f) phenol
(g) nitrobenzene
(h) 1-bromo-3-nitrobenzene
(i) 2-nitrotoluene
(j) 2-ethylphenol

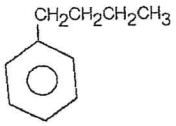
5. (a)



(b)



(c)



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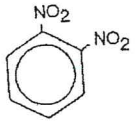

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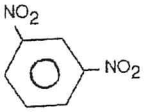

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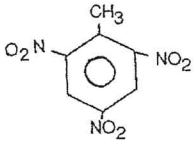


6. (a) 1-propanol
(b) propanal
(c) 5-methyl-3-hexanol
(d) 2-pentanone
(e) methanal
(f) propanamine
(g) 2-chloro-4-methylhexanal
(h) 2,5-dimethyl-3-hexanone
(i) 2-methyl-1-butanamine
(j) 2-propanamine

7. (a) $H_3C(CH_2)_3CH_2OH$

(b)
$$\begin{array}{l} CH_2OH \\ | \\ CHOH \\ | \\ CH_2OH \end{array}$$

(c)
$$\begin{array}{l} \quad\quad Cl \\ \quad\quad | \\ H_3CCH_2 - C - (CH_2)_2CH_2OH \\ \quad\quad | \\ \quad\quad CH_3 \end{array}$$

(d) $CH_2BrCH_2CH_2OH$

(e) HCHO

(f)
$$\begin{array}{l} H_3CCH_2CCH_3 \\ \quad\quad\quad \| \\ \quad\quad\quad O \end{array}$$

(g)
$$\begin{array}{l} BrCH_2CHCH_2CH_2CCH_2CH_3 \\ \quad\quad\;\; | \quad\quad\quad\;\; \| \\ \quad\quad\;\; NH_2 \quad\quad\;\; O \end{array}$$

(h)
$$\begin{array}{l} H_3CCHCH_2CHO \\ \quad\quad | \\ \quad\quad CH_3 \end{array}$$

(i)
$$\begin{array}{l} H_3CCH_2CHCH_2NH_2 \\ \quad\quad\quad\;\; | \\ \quad\quad\quad\;\; C_2H_5 \end{array}$$

(j)
$$\begin{array}{l} \quad\quad\quad\quad NH_2 \\ \quad\quad\quad\quad | \\ CH_2 - CH\ CHCHCH_3 \\ \quad | \quad\quad | \quad | \\ \quad Cl \quad H_3C \quad CH_3 \end{array}$$

8. (a) butanoic acid
(b) 3-chloropropanoic acid
(c) sodium propanoate
(d) methyl pentanoate
(e) methyl ethanoate
(f) 3-methyl butanoic acid
(g) propanamide

9. (a) $H_3CCH_2CHCOOH$ (Br)

(b) $HOCCH_2(CH_2)_3CH_2COH$ (O, O)

(c) $H_3CCH_2COCH_3$ (O)

(d) $HC-OCH_2CH_2CH_3$ (O)

(e) H_3CCOK (O)

(f) $HO-C-C-OH$ (O, O)

(g) $H_3CCH_2CNH_2$ (O)

(h) $HC-NH_2$ (O)

10. (a)

$H_3C(CH_2)_2CH_2OH$ 1-butanol

$H_3CCH_2CHCH_3$ (OH) 2-butanol

H_3CCHCH_2OH (CH_3) 2-methyl-1-propanol

H_3CCCH_3 (OH, CH_3) 2-methyl-2-propanol

(b)

$H_3CCH_2CH_2COH$ (O) butanoic acid

$H_3CCH_2COCH_3$ (O) methyl propanoate

$H_3CC-OC_2H_5$ (O) ethyl ethanoate

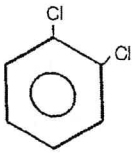
(c)

$H_3C(CH_2)_2CHO$ butanal

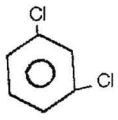
$H_3CCHCHO$ (CH_3) methyl propanal

$H_3CCH_2CCH_3$ (O) 2-butanone

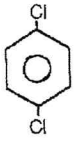
(d)



1,2-dichlorobenzene



1,3-dichlorobenzene



1,4-dichlorobenzene

(e) $H_3CCH_2CH=CH_2$, $H_3CCH=CHCH_3$, $H_3CC=CH_2$ (CH_3)

1-butene 2-butene methyl propene

(f) $H_3C(CH_2)_3CHO$ pentanal

H_3CCHCH_2CHO (3-methyl butanal)

H_3CCH_2CHCHO (2-methyl butanal)

H_3CCCHO (2,2-dimethyl propanal)

$H_3CCH_2CH_2CCH_3$ (2-pentanone)

$H_3CCHCCH_3$, (3-methyl-2-butanone)

$H_3CCH_2CCH_2CH_3$ (3-pentanone)