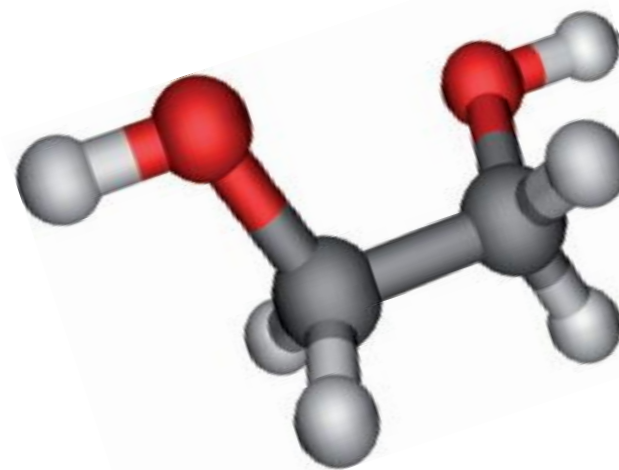
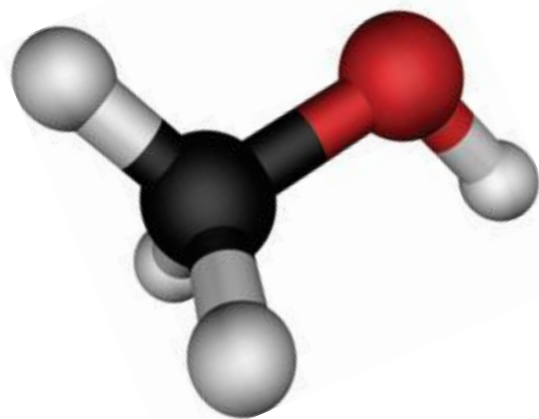




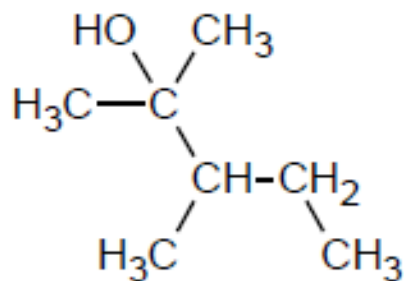
ALKOHOLI - PONAHLJANJE



Zadatci za ponavljanje

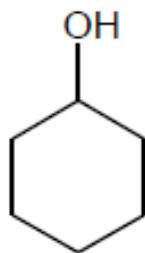
1. Sažetim strukturnim formulama prikažite strukture navedenih alkohola te odredite jesu li primarni, sekundarni ili tercijarni.

a) 2,3-dimetilpentan-2-ol



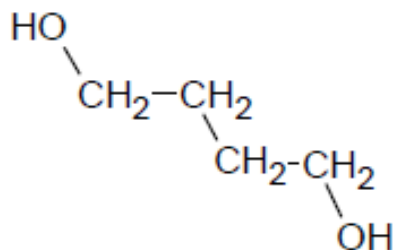
tercijarni

b) cikloheksanol



sekundarni

c) butan-1,4-diol

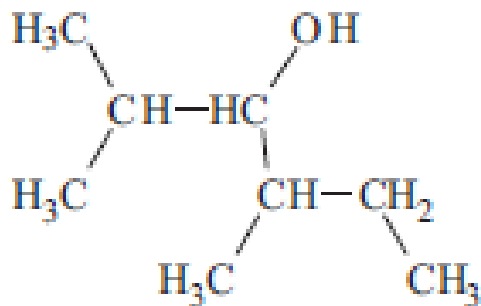


primarni

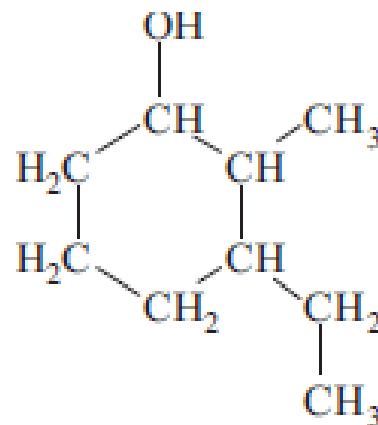


ORGANSKI SPOJEVI S KISIKOM

2. Imenujte ove spojeve:

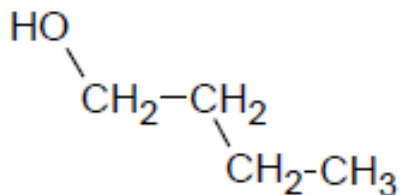


2,4-dimetilheksan-3-ol

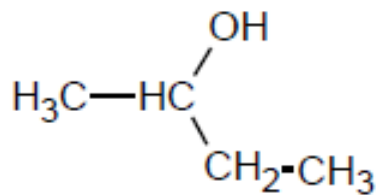


3-etil-2-metilcikloheksan-1-ol

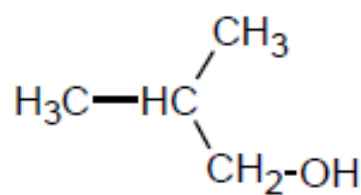
3. Nacrtajte sažete strukturne formule svih izomera spoja molekulske formule C₄H₉OH i imenujte ih.



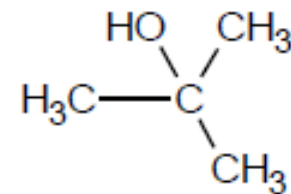
butan-1-ol



butan-2-ol



2-metilpropan-1-ol



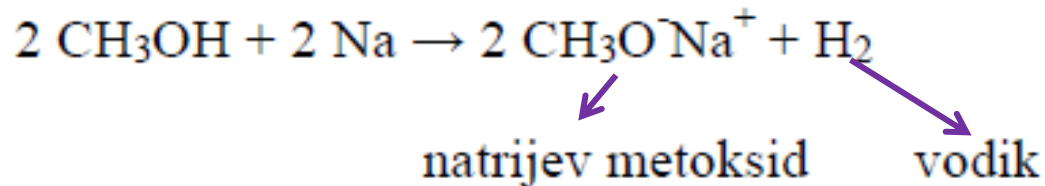
2-metilpropan-2-ol



ORGANSKI SPOJEVI S KISIKOM

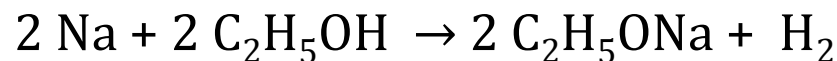
4. Napišite jednadžbe kemijskih reakcija:

a) metanola s natrijem i imenujte produkte kemijske reakcije



b) gorenja etanola $\text{C}_2\text{H}_5\text{OH} + \frac{7}{2} \text{O}_2 \rightarrow 2 \text{CO}_2 + 3 \text{H}_2\text{O}$

5. Izračunajte masu natrijeva etoksida koji nastaje u reakciji 2 g natrija s bezvodnim etanolom, uz uvjet da je sav natrij izreagirao.



$$n(\text{Na}) = \frac{m(\text{Na})}{A_r(\text{Na})} = \frac{2 \text{ g}}{22,99 \text{ g/mol}} = 0,087 \text{ mol}$$

$$n(\text{C}_2\text{H}_5\text{ONa}) : n(\text{Na}) = 1 : 1$$

$$n(\text{C}_2\text{H}_5\text{ONa}) = 0,087 \text{ mol}$$

$$\begin{aligned} m(\text{C}_2\text{H}_5\text{ONa}) &= M(\text{C}_2\text{H}_5\text{ONa}) \times n(\text{C}_2\text{H}_5\text{ONa}) \\ &= 68,05 \text{ g/mol} \times 0,087 \text{ mol} \\ &= 5,92 \text{ g} \end{aligned}$$



ORGANSKI SPOJEVI S KISIKOM

6. Izračunajte masene udjele pojedinih elemenata u glicerolu.

molekulska formula glicerola: $C_3H_8O_3$

$$M_r(C_3H_8O_3) = 3 \times 12,01 + 8 \times 1,008 + 3 \times 16,00 = 92,094$$

$$w(C) = \frac{3 \times A_r(C)}{M_r(C_3H_8O_3)} = \frac{36,03}{92,094} = 39,12 \%$$

$$w(H) = \frac{8 \times A_r(H)}{M_r(C_3H_8O_3)} = \frac{8,064}{92,094} = 8,76 \%$$

$$w(O) = 100 \% - (39,12 \% + 8,76 \%) = 52,12 \%$$

7. Izračunajte volumen metanola koji nastaje reakcijom 10 L ugljikova(II) oksida s vodikom pri standardnim uvjetima.



$$n(CO) = \frac{V(CO)}{V_m} = \frac{10 \text{ L}}{22,4 \text{ dm}^3/\text{mol}} = 0,45 \text{ mol}$$

$$n(CH_3OH) : n(CO) = 1 : 1$$

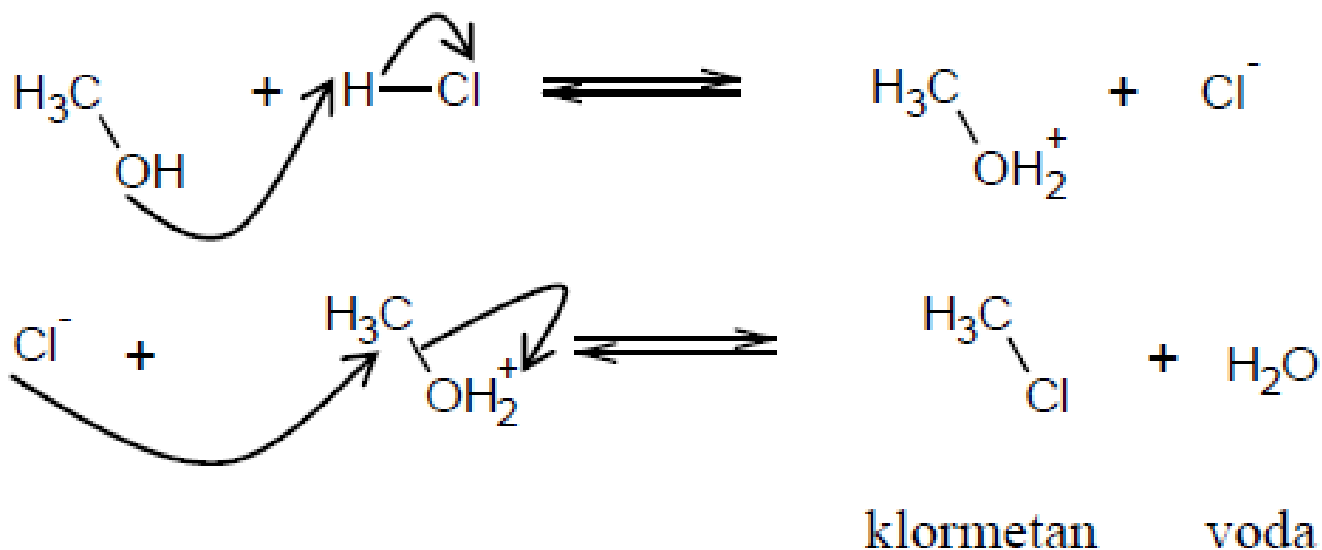
$$n(CH_3OH) = 0,45 \text{ mol}$$

$$\begin{aligned} V(CH_3OH) &= n(CH_3OH) \times V_m \\ &= 0,45 \text{ mol} \times 22,4 \text{ dm}^3/\text{mol} \\ &= 10,08 \text{ dm}^3 = 10 \text{ L} \end{aligned}$$



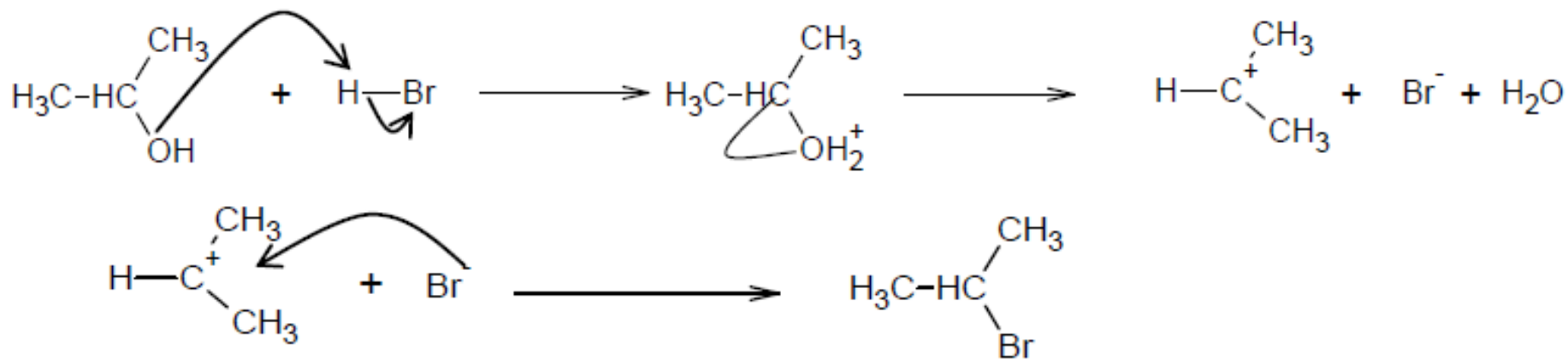
ORGANSKI SPOJEVI S KISIKOM

8. Prikažite mehanizam kemijske reakcije metanola s klorovodikom i imenujte produkte.



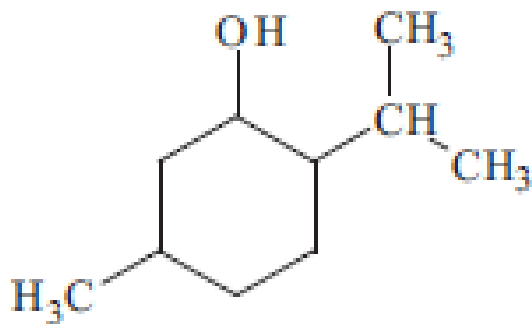
ORGANSKI SPOJEVI S KISIKOM

9. Prikažite mehanizam kemijske reakcije propan-2-ola s bromovodikom i imenujte produkte.



2-bromopropan

10. Eterično ulje metvice sadrži alkohol mentol. Odredite sustavno ime mentola pomoću modela molekule ili sažete strukturne formule.



2-izopropil-5-metilcikloheksan-1-ol