



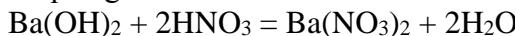
Ma'rifat gazetasining savollari.

Ushbu yechimlar "Kimiyoosamarqaand" ATM o'qituvchisi Voxidov Sardor tomonidan tayyorlandi.

1. Bariy gidroksid va mo'l miqdordagi nitrat kislota ta 'sirlashuvidan olingen tuz molekulasi tarkibidagi atomlar sonini aniqlang.

- A ) 5    B) 7    C) 9    D) 4

Yechim: Agar kislota bir negizli bo'lsa o'rta tuz, ko'p negizli bo'lsa nordon tuz hosil bo'ladi.



1.1) Alyuminiy gidroksid va mo'l miqdordagi nitrat kislota ta 'sirlashuvidan olingen tuz molekulasi tarkibidagi atomlar sonini aniqlang.

- A ) 13    B) 7    C) 9    D) 16

1.2) Natriy gidroksid va mo'l miqdordagi Sulfat kislota ta 'sirlashuvidan olingen tuz molekulasi tarkibidagi atomlar sonini aniqlang.

- A ) 5    B) 7    C) 9    D) 4

1.3) Bariy gidroksid va mo'l miqdordagi Sulfat kislota ta 'sirlashuvidan olingen tuz molekulasi tarkibidagi atomlar sonini aniqlang.

- A ) 5    B) 7    C) 9    D) 6

2. Qaysi birikma(lar)da fosfor III valentli hisoblanadi?

- 1)  $\text{PCl}_5$ ; 2)  $\text{PCl}_3$ ; 3)  $\text{P}_4$  4)  $\text{P}_2\text{O}_5$ .

- A) 2, 3    B) faqat 1    C) 1 ,4    D) faqat 2

2.1) Qaysi birikma(lar)da fosfor V valentli hisoblanadi?

- 1)  $\text{PCl}_5$ ; 2)  $\text{PCl}_3$ ; 3)  $\text{P}_4$  4)  $\text{P}_2\text{O}_5$ .

- A) 2, 3    B) faqat 1    C) 1 ,4    D) faqat 2

3. Qaysi moddalarning tarkibi olinish usuliga bog'liq?

- 1)  $\text{CO}_2$ ; 2)  $\text{FeO}$ ; 3)  $\text{H}_2\text{O}$ ; 4)  $\text{NO}_2$ ;

- 5)  $\text{Ca}_3\text{N}_2$ ; 6) VO.

- A) 1, 3, 4    B) 2, 4, 6    C) 2, 5, 6    D) 1, 3, 5

4. Qaysi moddalar qizdirilganda  $\text{CO}_2$  hosil bo'ladi?

- 1) lyapis; 2) dolomit; 3) ohaktosh; 4) glauber tuzi.

- A) 1, 3    B) 2, 3

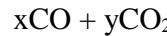
- C) 1, 4    D) 2, 4

5. Is gazi va karbonat angidriddan iborat

gazlar aralashmasida jami kislород atomlarining massa ulushi 64% bo'lsa, is gazining massa ulushini (%) hisoblang.

- A) 44    B) 56    C) 40    D) 60

Yechim: ikki nomalumdan ishlaymiz.



$$28x+44y=100$$

$$16x+32y=64$$

$$X=2 \quad y=1$$

$$2*28=56 \text{g}/100 \text{g}=0.56*100\%=56\%$$

6. Geliy bilan qaysi gaz teng massada aralashtirilsa, molar massa 7.0 g/mol bo'ladi?

- A) metan    B) kislород  
C) fosfin    D) azot

6.1) Metan bilan qaysi gaz teng massada aralashtirilsa, molar massa 25.6 g/mol bo'ladi?

- A) ozon    B) kislород  
C) fosfin    D) azot

6.2) Neon bilan qaysi gaz teng massada aralashtirilsa, molar massa  $80/3$  g/mol bo'ladi?

- A) ozon    B) kislород  
C) fosfin    D) argon

7 . Ekvimolar nisbatda olingen  $\text{X}_2$  va  $\text{Y}_2$  reaksiyasidan  $\text{X}_2\text{Y}_3$  hosil bo'lib, 2 mol modda ortib qoldi. Bunga ko'ra necha mol  $\text{X}_2\text{Y}_3$  olingen?

- A) 2    B) 4    C) 3    D) 1

8. Yopiq idishda kislород gazi ozonlantirilganda bosim 10% ga kamaydi. Ozonlangan kislородда  $\omega(\text{O}_3)$  qiymatini hisoblang.

- A) 3/10    B) 1/2    C) 2/9    D) 2/5

8.1) Yopiq idishda kislород gazi ozonlantirilganda bosim 10% ga kamaydi. Ozonlangan kislородда  $\varphi(\text{O}_3)$  qiymatini hisoblang.

- A) 3/10    B) 1/2    C) 2/9    D) 2/5

8.2) Yopiq idishda kislород gazi ozonlantirilganda bosim 20% ga kamaydi. Ozonlangan kislородда  $\omega(\text{O}_3)$  qiymatini hisoblang.

- A) 6/10    B) 1/4    C) 1/2    D) 2/5

9. HF va ozondan iborat gazlar aralashmasidagi moddalar mos ravishda  $1,204 \cdot 10^{23}$  va  $0,72 \cdot N_A$  dona neytronga ega bo'lsa, gazlar aralashmasining molar massasini (g/mol) hisoblang.

- A) 36,8    B) 41,9    C) 28,8    D) 39,4



10. Qaysi zarrachalar tarkibida elektrolar farqi 2 ga teng?

- A)  $S^0$  va  $Cl^-$       B)  $Al^{+3}$  va  $N^{-3}$   
 C)  $Ca^{2+}$  va  $Cl^{+5}$       D)  $N^{3+}$  va  $P^{3+}$

10.1) Qaysi zarrachalar tarkibida elektrolar farqi 1 ga teng?

- A)  $S^{-2}$  va  $Cl^{+1}$       B)  $Al^{+3}$  va  $N^{-3}$   
 C)  $Ca^{2+}$  va  $Cl^-$       D)  $N^{3-}$  va  $P^{3-}$

11. Qaysi element atomining qo‘zg‘almagan holatida tashqi qobig‘idagi toq va juft elektronlar soni o‘zaro teng?

- A) C                          B) O  
 C) N                          D) F

Yechim: Bu savolda ham xar bir variantni yozib aniqlashimiz kerak.

$$C = 1s^2 2s^2 2p^2$$



11.1) Qaysi element atomining qo‘zg‘almagan holatida tashqi qobig‘idagi toq va juft elektronlar soni 2:1 nisbatda ?

- A) C                          B) O  
 C) N                          D) F

12. Kimyoviy elementlar davriy sistemasining asosiy guruhchasida tartib raqami kamayishi bilan element xossalari qanday o‘zgaradi?

- A) atom radiusi ortadi va elektromanfiylik kamayadi  
 B) atom radiusi ortadi va metallik xossasi kamayadi  
 C) atom radiusi kamayadi va elektromanfiylik ortadi  
 D) atom radiusi kamayadi va metallik xossasi ortadi

13.  $X^{+1}$ ,  $X^{-3}$ ,  $X^{+5}$  zarrachalaridagi proton va elektronlar yig‘indisi 87 ga teng bo‘lsa, X elementning yuqori oksidi molar massasini (g/mol) hisoblang.

- A) 230      B) 142      C) 98      D) 151

Yechim:

$$3x + 3x - 1 + 3 - 5 = 87$$

$$6x - 3 = 87$$

$$6x = 90$$

$X = 15$  (P-fosfor)

$$P_2O_5 = 142 \text{ g/mol} .$$

13.1)  $X^{+4}$ ,  $X^2$ ,  $X^{+6}$  zarrachalaridagi proton va elektronlar yig‘indisi 88 ga teng bo‘lsa, X elementning yuqori oksidi molar massasini (g/mol) hisoblang.

- A) 80      B) 142      C) 64      D) 151

14.  $^{42}Ca^{16}O$  va  $^{40}Ca_3^{15}N_2$  dan iborat 0,8 mol aralashmada 50 mol elektron mavjud bo‘lsa, undagi oksidning massasini (g) toping.

- A) 16,8      B) 11,6      C) 11,2      D) 17,4

Yechim:

Ikki noma’lum tenglamadan foydalanamiz.

$$X + y = 0.8$$

$$28x + 74y = 50$$

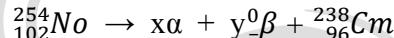
$$X = 0.2 \quad y = 0.6$$

$$CaO = 58 \text{ g/mol} * 0.2 = 11.6 \text{ g}$$

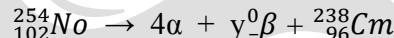
15.  $^{102}_{102}No \rightarrow x\alpha + y\beta + ^{238}_{96}Cm$  yadro reaksiyasi asosida  $6,02 \cdot 10^{19}$  dona elektron hosil bo‘lgan bo‘lsa, yemirilgan nobeliy izotopi massasini (mg) hisoblang.

- A) 6,35      B) 38,1      C) 12,7      D) 25,4

Yechim:



$$254 - 238 = 16/4 = 4 \text{ ta alfa zarracha.}$$



$$102 = 8 - x + 96$$

$$X = 2 \text{ elektron.}$$

$$254 \text{ mg} \dots 12.04 \cdot 10^{20}$$

$$x \dots 6.02 \cdot 10^{19}$$

$$x = 12.7 \text{ mg}$$

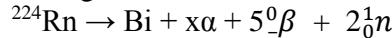
16.  $^{224}_{114}Rn \rightarrow Bi + x\alpha + y\beta + ^{21}_{0}n$  yadro reaksiyasi asosida  $1,12 \cdot 10^{-4}$  gr radon parchalanganda  $1,505 \cdot 10^{18}$  dona elektron hosil bo‘lgan bo‘lsa, reaksiya natijasida olingan vismut izotopidagi neytronlar sonini aniqlang.

- A) 120      B) 110      C) 114      D) 123

Yechim:

$$0.000112 \text{ g} \dots 1.505 \cdot 10^{18}$$

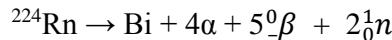
$$224 \text{ g} \dots x = 30.1 \cdot 10^{23} / 6.02 \cdot 10^{23} = 5 \text{ mol e}$$



$$86 = 83 + 2x - 5$$

$$8 = 2x$$

$$X = 4$$



224 - 16 - 2 = 206 Bi izotopi.

$$206 - 83 = 123 \text{ ta n.}$$

17. Quyidagi moddalarni bog‘ energiyasi ortish tartibida joylashtiring.

- 1) HCl; 2) HF; 3) HJ 4) HBr.

- A) 2, 1, 3, 4      B) 2, 1, 4, 3

- C) 3, 4, 1, 2      D) 4, 3, 1, 2

Izoh: Yuqoridan pastga qarab kamayib boradi.

18. Metall, kovalent va ion bog‘lanishli moddalar ketma – ketligini toping.

- A) Be,  $SO_3$ ,  $CaF_2$

- B) Sn,  $N_2$ ,  $H_3PO_4$

- C)  $Ag_2S$ ,  $O_3$ ,  $NaCl$



D) Cu, HCl, PH<sub>3</sub>

18.1) Metall, kovalent va ion bog'lanishli moddalar ketma – ketligini toping.

- A) O<sub>3</sub>, N<sub>2</sub>O<sub>5</sub>, Li<sub>3</sub>PO<sub>4</sub>  
B) Na, K<sub>2</sub>O, MgSO<sub>4</sub>

**C) Cu, SiH<sub>4</sub>, CsF**

- D) K<sub>2</sub>S, P<sub>4</sub>, CaCl<sub>2</sub>

18.1. Metall, kovalent va ion bog'lanishli moddalar ketma – ketligini toping.

- A) Zn, HF, NH<sub>3</sub>  
**B) Ag, NO<sub>2</sub>, SrF<sub>2</sub>**  
C) Ag<sub>2</sub>S, S<sub>8</sub>, KI  
D) Pb, F<sub>2</sub>, H<sub>3</sub>AsO<sub>4</sub>

18.2) Metall, kovalent va ion bog'lanishli moddalar ketma – ketligini toping.

- A) N<sub>2</sub>, BaF<sub>2</sub>, BaSO<sub>4</sub>  
**B) Li, Na<sub>3</sub>N, MgS**  
**C) Au, CH<sub>4</sub>, NaCl**  
D) O<sub>3</sub>, N<sub>2</sub>O<sub>5</sub>, Li<sub>3</sub>PO<sub>4</sub>

19. Ozon (1) va olmos (2) ning kristall panjaralarini aniqlang. a) atom; b) molekular.

- A) 1–b; 2–b  
**B) 1–b; 2–a**  
C) 1–a; 2–b  
D) 1–a; 2–a

20. Bog'i qutbli, molekulasi qutbsiz bo'lgan moddani belgilang.

- A) CH<sub>4</sub>**   B) SO<sub>2</sub>   C) H<sub>2</sub>O   D) NH<sub>3</sub>

21. Qaysi moddalar qatorida elektron zichlik azot atomi tomon siljigan?

- A) N<sub>2</sub>O, NH<sub>3</sub>  
**B) NCl<sub>3</sub>, NO<sub>2</sub>**  
C) AlN, NH<sub>3</sub>  
D) NO, NH<sub>3</sub>

Yechim: Ikkinci element elektromanfiyligi azotnikidan kichik bo'lishi zarur.

22. ClO<sub>n</sub><sup>-</sup> ioni tarkibida 50 ta elektron bo'lsa, undagi sp<sup>2</sup> – orbitallar sonini aniqlang.

- A) 3      B) 6      C) 0      **D) 9**

Yechim: ClO<sub>n</sub><sup>-</sup> = 50ta jami e.

$$17+8n+1=50$$

$$32=8n$$

$$n=4 \quad \text{ClO}_4^- = 9 \text{ ta sp}^2.$$

23. O'rтacha tezligi 2,5 mol/(l·min) bo'lgan reaksiya (X(g) ↔ Y(g)) uchun 5 mol X modda olindi.

Agar 24 sekunddan keyin  $12,04 \cdot 10^{23}$  dona X sarflanmay qolgan bo'lsa, reactor hajmi qancha (litr) bo'lganligini toping.

- A) 2      B) 1      C) 4      **D) 3**

Yechim:

$$12,04 \cdot 10^{23} / 6,02 \cdot 10^{23} = 2 \text{ mol X ortgan.}$$

$$2,5 \text{ mol} \xrightarrow{\text{---}} 60 \text{ s}$$

$$\xrightarrow{\text{---}} 24 \text{ s}$$

x=1 mol/l reakisaga kirishgan.

$$1 \text{ mol} \xrightarrow{\text{---}} 11$$

$$3 \text{ mol} \xrightarrow{\text{---}} x=31 \text{ bo'lgan reaktor.}$$

24. 5 litr hajmli idishda A + B → C + D reaksiyaning 10°C dagi tezligi 0,6 mol/(l·min). 50°C da esa 4 mol D modda 5 sekundda hosil bo'lsa, reaksiyaning temperatura koeffeyentini ( $\gamma$ ) aniqlang.

- A) 1,5      **B) 2**      C) 3      D) 2,5

Yechim: Dastlab 50°C da tezlikni topamiz.

$$4 \text{ mol} / 5 = 0,8 \text{ mol/l} \xrightarrow{\text{---}} 5 \text{ s}$$

$$\xrightarrow{\text{---}} x \xrightarrow{\text{---}} 60 \text{ s}$$

$$x=9,6 \text{ mol/l} \cdot \text{min}$$

Temperaturalar farqi  $50-10=40$  / 10 = 4 demak, gammanning to'rtinch darajasi.

$$V_2 = 0,6 \cdot x^4 = 9,6$$

$$x^4 = 16$$

$$x=2$$

25. A(g) + 3B(g) = C(g) + 2D(g) reaksiyada A va B moddaning boshlang'ich konsentratsiyalari mos ravishda 5 va 9 mol/l ga teng. 20 sekunddan so'ng ularning konsentratsiyalari tenglashgan bo'lsa, D moddaning hosil bo'lish tezligini (mol/(l·s)) hisoblang.

- A) 0,1      **B) 0,2**      C) 0,6      D) 1,2

Yechim:

$$A(g) + 3B(g) = C(g) + 2D(g)$$

$$x \xrightarrow{\text{---}} 3x \xrightarrow{\text{---}} x \xrightarrow{\text{---}} 2x$$

Konsentratsiyani tenglaymiz.

$$5-x = 9-3x$$

$$2x=4 \quad x=2$$

D modda  $2 \cdot 2 = 4$  mol kirishgan reaksiyaga.

$$4 \text{ mol} \xrightarrow{\text{---}} 20 \text{ s}$$

$$x \xrightarrow{\text{---}} 1 \text{ s}$$

$$x=0,2 \text{ mol/l} \cdot \text{s}$$

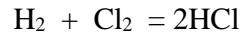
26. . H<sub>2</sub> + Cl<sub>2</sub> = 2HCl sistemada muvozanat holatdagi moddalarning miqdorlari mos ravishda 2 mol, 2 mol va 4 molga teng. Sistemaga qancha (mol) H<sub>2</sub> qo'shilsa, yangi muvozanat qaror topgandan keyin HCl ning miqdori 5 mol bo'ladi? (V = 2 litr, T = const.)

- A) 16/3      B) 3/18      **C) 8/3**      D) 7/3

Yechim: Dastlab Km ni topamiz.

$$K_M = \frac{4^2}{2 \cdot 2} = 4$$

5-4=1 mol HCl hosil bo'lishi zarur.



$$1 \xrightarrow{\text{---}} 1 \xrightarrow{\text{---}} 2$$

$$0,5 \xrightarrow{\text{---}} 0,5 \xrightarrow{\text{---}} 1$$

Hosil bo'lgan sistemada.

$$[\text{H}_2] = 2-0,5=1,5$$

$$[\text{Cl}_2]=2-0,5+x=1,5+x=y \rightarrow \text{muvozanat konsentrat.}$$

$$[\text{HCl}] = 5 \text{ mol/l}$$

Km ni topgamiz, 4 va u o'zgarmaydi.

$$K_M = \frac{5^2}{1,5 \cdot y} = 4$$

$$25=6y$$

$y=25/6\text{mol/l}$  → H<sub>2</sub> muvozanat konsentratsiyasi.

$$1,5+x=25/6$$

$$x=\frac{25}{6}-\frac{9}{6}=\frac{8}{6}\text{ mol} \rightarrow \text{Qo'shilgan H}_2.$$

.  
27. Butan → izobutan izomerlanish reaksiyasining tezlik konstantasi 80 min<sup>-1</sup>, izobutan → butan reaksiyasining tezlik konstantasi 20 min<sup>-1</sup> ga teng bo'lsa, 29 g butandan hosil bo'lgan aralashmada nechta birlamchi uglerodga bog'langan vodorod atomi bo'ladi?

- A) 5,1·N<sub>A</sub>   B) 3,6·N<sub>A</sub>   C) 4,2·N<sub>A</sub>   D) 2,7·N<sub>A</sub>

Yechim:

Muvozanat bu to'ri va teskari reaksiyalar tenglashga vaqt.

29/58=0.5mol jami modda mavjud.

Butan = x mol/l   izobutan = (0.5-x) mol/l

$$80*x = 20*(0.5-x) = \text{Tezliklar teng xolat.}$$

$$x=0.1\text{m} = \text{Butan} \quad 0.4\text{m} = \text{izobutan.}$$

$$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3 = 1\text{m-----6m ( birlam. Vod.)}$$

$$0.1\text{m-----x}=0.6\text{mol}$$

$$\text{CH}_3\text{CH}(\text{CH}_3)\text{CH}_3 = 1\text{mol-----9m}$$

$$0.4\text{m-----x}=3.6\text{mol}$$

$$\text{Jami: } 0.6+3.6 = 4.2 \cdot N_A \text{ ta.}$$

28. X(g) ⇌ 2 Y(g) reaksiya tenglamasi bo'yicha to'g'ri reaksiya tezlik konstantasi k<sub>1</sub> = 0,04 s<sup>-1</sup> va teskari reaksiya tezlik konstantasi k<sub>2</sub> = 0,1 litr/(mol·s). Muvozanat holatdagi sistemada 0,1 mol/l X modda bo'lsa, uning dastlabki miqdorini (mol) aniqlang. (V = 4 litr)

- A) 1,2   B) 0,8   C) 0,6   D) 0,4

Yechim: Muvozanat bu to'g'ri va teskari reaksiyalar tenglashgan vaqt.

$$V_1 = k_1[X]$$

$$V_2 = k_2[Y]^2$$

$$X \rightleftharpoons{} 2Y$$

$$x-----2x$$

$$\text{Muvozanatda } [X] = 0,01\text{mol/l} \quad [Y] = 2x$$

$$0,04 \cdot 0,1 = 0,1 \cdot (2x)^2$$

$$0,004 = 0,4x^2$$

$$X^2 = 0,001$$

$$X = 0,1\text{mol/l}$$

$$[X] = 0,1 + 0,1 = 0,2\text{mol/l} \text{ dastlab bo'lgan.}$$

$$0,2\text{mol/l} * 4l = 0,8\text{mol dastlab bo'lgan.}$$

29. A<sub>(g)</sub> + B<sub>(g)</sub> ⇌ 2C<sub>(g)</sub>. Muvozanat holatida moddalarning konsentratsiyasi mos ravishda 2; 2 va 4 mol/l ga teng. Agar harorat oshirilganda muvozanat konstantasi qiymati 4 marta kamayishi ma'lum bo'lsa, yangi muvozanatdagi C moddaning molar konsentratsiyasini (mol/l) aniqlang.

1. A) 1,5   B) 2/3   C) 8/3   D) 2,5

Yechim: Dastlabki K<sub>M</sub> ni topamiz.

$$K_M = \frac{4^2}{2 \cdot 2} = 4$$

$$A + B = C$$

x-----x-----x   chagpa suriladi. 4/4=1 = K<sub>m2</sub>

$$K_{M2} = \frac{(4 - 2x)^2}{(2 + x)^2} = 1^2$$

Soddalash tiramiz: 4-2x = 2+x

$$3x = 2$$

$$x = 2/3\text{m} * 2 = 4/3\text{mol C}.$$

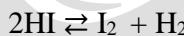
$$[C] = 4m - 4/3m = 8/3\text{mol qolgan.}$$

30. 2HI ⇌ I<sub>2(g)</sub> + H<sub>2(g)</sub> reaksiyaning 600 K

dagi muvozanat konstantasi 4 ga teng. 1 litrli idishga 6 mol HI solinsa, yuzaga kelgan muvozanatda I<sub>2</sub> ning miqdorini (mol) aniqlang.

- A) 3,2   B) 2,4   C) 0,8   D) 1,6

Yechim:



$$2x-----x-----x$$

$$K_M = \frac{x^2}{(6 - 2x)^2} = 2^2$$

Darajalarni qisqartiramiz.

$$K_M = \frac{x}{6 - 2x} = 2$$

$$x = 12 - 4x$$

$$x = 2,4\text{mol}$$

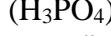
$$[I] = 2,4\text{mol/l} \text{ yod konsentratsiyasi}$$

31. Zichligi 1,2 g/ml bo'lgan 600 g eritmada 147 g ortofosfat kislota mavjud. Eritma konsentratsiyasini (mol/l) hisoblang. (Zichlik nisbiy olingan)

- A) 2   B) 3   C)   D) 5

Yechim:

$$V = \frac{m}{d} = \frac{60}{1,2} = 500 \text{ ml} = 0,5 \text{ l} \quad n = \frac{m}{M} = \frac{147}{98} = 1,5$$



$$C_M = \frac{n}{V} = \frac{1,5}{0,5} = 3 \text{ mol/l}$$

Javob: B) 3

32. 720 g (p = 1,2 g/ml) 0,3M li sulfat kislota eritmasi bilan 200 ml 0,6M li X eritmasi to'liq reaksiyaga kirishdi. X ni toping.

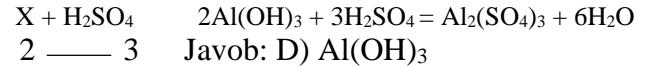
- A) KOH   B) Ca(OH)<sub>2</sub>   C) NH<sub>3</sub>   D) Al(OH)<sub>3</sub>

Yechim:

$$V = \frac{720}{1,2} = 600 \text{ ml} \quad n(\text{H}_2\text{SO}_4) = 0,3 * 0,6 = 0,18 \text{ mol}$$

$$n(X) = 0,6 * 0,2 = 0,12 \text{ mol}$$

$$0,12 — 0,18$$



$$2 — 3 \quad \text{Javob: D) Al(OH)}_3$$

33. 8 g NaOH dan foydalanib qanday massali (g) 4 molyalli eritma tayyorlash mumkin? (Molyallik



– 1 kg erituvchiga mos keluvchi erigan modda miqdori)  
A) 46      **B) 58**      C) 40      D) 50

Yechim:

$$m(H_2O) = \frac{n}{Cm} = \frac{0,2}{4} = 0,05 \text{ kg} = 50 \text{ g}$$

$$m_u = m(NaOH) + m(H_2O) = 8 + 50 = 58 \text{ g}$$

Javob: B) 58

34. 40 g natriy gidroksid eritmasida 14,2 g fosfat angidrid eritilganda ekvimolar nisbatdagi nordon tuzlar aralashmasi hosil bo'ldi. Ishqor eritmasining konsentratsiyasini (%) hisoblang.

- A) 10      B) 40      **C) 30**      D) 20

Yechim:

$$12 = x \quad 14,2 \text{ g}$$



$$C\% = \frac{12}{40} \cdot 100 = 30 \%$$

Javob: C) 30

35. Sof nitrat kislotaning zichligi 1,26 g/ml. Zichligi 1,052 g/ml bo'lgan nitrat kislotasi eritmasining molyal konsentratsiyasini (mol/kg) hisoblang. (Molyal konsentratsiya – erigan modda miqdorining erituvchi massasiga nisbati.)

- A) 1,2      B) 10      **C) 5**      D) 2,4

Yechim:

$$m(HNO_3) = 126 \text{ g} (2 \text{ mol}); \rho = 1,26 \text{ g/ml}; V = 100 \text{ ml}$$

$$\frac{126+x}{100+x} = 1,052 \quad x = 400 \text{ g (ml)} = 0,4 \text{ kg}$$

$$C_m = \frac{2}{0,4} = 5 \text{ mol/kg}$$

Javob: C) 5

36. 100 ml ( $\rho = 1,006 \text{ g/ml}$ ) 2M li sulfat kislotasi suvli eritmasi necha gramm kaliy gidrid bilan to'liq reaksiyaga kirishadi? (Zichlik nisbiy olingan)

- A) 16      **B) 196**      C) 32      D) 98

Yechim:

$$n(H_2SO_4) = 2 \cdot 0,1 = 0,2 \text{ mol} \quad m = 0,2 \cdot 98 = 9,6 \text{ g}$$

$$m(H_2O) = 100,6 - 19,6 = 81 \text{ g} \quad n = \frac{81}{18} = 4,5 \text{ mol}$$

$$0,2 \quad x = 16 \text{ g} \quad 4,5 \quad x = 180 \text{ g}$$

$$H_2SO_4 + 2KH = K_2SO_4 + 2H_2O \quad H_2O + KH = KOH + H_2$$

$$1 \text{ mol} \quad 80 \text{ g} \quad 1 \text{ mol} \quad 40 \text{ g}$$

$$m(KH) = 16 + 180 = 196 \text{ g}$$

Javob: A) 196

36.1) 100 ml ( $\rho = 1,006 \text{ g/ml}$ ) 2M li sulfat kislotasi suvli eritmasi 196 g noma'lum ishqoriy metalli gidrid bilan to'liq reaksiyaga kirishgan bo'lsa, metallni aniqlang. (Zichlik nisbiy olingan)

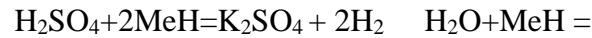
- A) litiy      B) rubidiy  
**C) kaliy**      D) natriy

Yechim:

$$n(H_2SO_4) = 2 \cdot 0,1 = 0,2 \text{ mol} \quad m = 0,2 \cdot 98 = 19,6 \text{ g}$$

$$m(H_2O) = 100,6 - 19,6 = 81 \text{ g} \quad n = \frac{81}{18} = 4,5 \text{ mol}$$

$$0,2 \quad x = 0,4 \text{ mol} \quad 4,5 \quad x = 4,5 \text{ mol}$$



$$1 \quad 2 \quad 1 \quad 1$$

$$M(MeH) = \frac{196}{4,9} = 40 \text{ g/mol (KH)}$$

Javob: C) kaliy

37. Natriy gidroksid va natriy karbonatlarning konsentratsiyasi tegishli ravishda 0,2 mol/l va 0,3 mol/l bo'lgan 250 ml eritmaga 5,88 g natriy gidrokarbonat qo'shildi. Hosil bo'lgan eritmada gidrokarbonat va karbonat anionlarining molarligini hisoblang. (jarayonda hajm o'zgarmagan deb hisoblang)

- A) 0,02; 0,125      **B) 0,08; 0,5**  
C) 0,02; 0,03      D) 0,07; 0,075

Yechim:

$$n(NaOH) = 0,2 \cdot 0,25 = 0,05 \text{ mol}$$

$$n(Na_2CO_3) = 0,3 \cdot 0,25 = 0,075 \text{ mol}$$

$$n(NaHCO_3) = \frac{5,88}{84} = 0,07 \text{ mol}$$

$$0,05 \quad x = 0,05 \quad x = 0,05$$



$$1 \text{ mol} \quad 1 \text{ mol} \quad 1 \text{ mol}$$

$$n(HCO_3^-) = 0,07 - 0,05 = 0,02 \text{ mol}$$

$$n(CO_3^{2-}) = 0,075 + 0,05 = 0,125 \text{ mol}$$

$$C_M = \frac{0,02}{0,25} = 0,08 \text{ mol/l} \quad C_M = \frac{0,125}{0,25} = 0,5 \text{ mol/l}$$

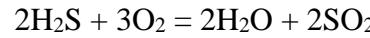
Javob: B) 0,08; 0,5

38. . 13,44 l (n.sh.)  $H_2S$  mo'l kislrororra yondirilib, olingan gaz 200 g  $NaOH$  eritmaside o'tkazildi. Hosil bo'lgan eritmada nordon tuz massasi o'rta tuzdan 16,4 g ga ko'p bo'lsa, sarflangan ishqor eritmasining foiz konsentratsiyasini hisoblang.

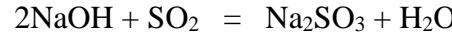
- A) 32      B) 20      **C) 16**      D) 40

Yechim:

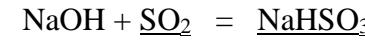
$$13,44 \text{ l} \quad x = 13,44 \text{ l} (0,6 \text{ mol})$$



$$0,4 \quad (0,2) x$$



$$0,4 \quad (0,4) 0,6 - x$$



$$0,6 \text{ mol} \quad 0,6$$

$$(0,6 - x) \cdot 104 - 126x = 16,4$$

$$62,4 - 230x = 16,4$$

$$x = 0,2$$

$$n(\text{NaOH}) = 0,4 + 0,4 = 0,8 \text{ mol}$$

$$C\% = \frac{32}{200} \cdot 100 = 16 \%$$

Javob: C) 16

39. Tarkibi alangani sariq rangga bo'yaydigan aktiv metall kationidan va kumush ioni bilan sariq cho'kma hosil qiladigan aniondan iborat tuzning molar massasini (g/mol) toping.

- A) 212 B) 149 C) **164** D) 310

Yechim:

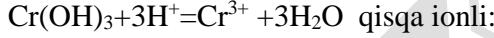
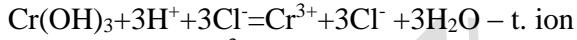
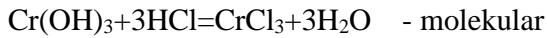
1)  $\text{Na}^+$  va  $\text{PO}_4^{3-}$  ionlaridan hosil bo'lgan tuz

$$\text{Na}_3\text{PO}_4 = 164 \text{ /mol.}$$

40. Xrom (III)-gidroksid va vodorod xlorid suvli eritmada o'zaro ta'sirlashib o'rta tuz hosil qildi. Ushbu jarayonning qisqa ionli tenglamasidagi koeffitsiyentlar yig'indisini toping.

- A) 3 B) 11 C) **8** D) 6x

Yechim:



$$1+3+1+3=8$$

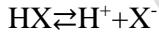
41. 2 litr 0,4M li HX kislota eritmasida kislota hisobiga hosil bo'lgan zarrachalar Avogadro soniga teng bo'lsa, HX kislotaning dissotsilanish darajasini toping.

- A) 1/2 B) 1/5

- C) **1/4** D) 1/3

Yechim:

$$0.4\text{mol/l} \cdot 2\text{l} = 0.8\text{mol (HX)}$$



$$x ----- 2x$$

$$0.8-x+2x=1 \text{ mol}$$

$$X=0.2$$

$$0.2/0.8=1/4$$

42. Titri 100 mg/cm<sup>3</sup> bo'lgan temir (III)-sulfat eritmasidagi temir ionqlarining konsentratsiyasini (mol/dm<sup>3</sup>) hisoblang.

(a = 1. Titr - eritmada erigan modda og'irligining eritmaning hajmiga nisbati.)

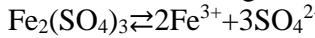
- A) 0,025 B) **0,5**

- C) 0,25 D) 0,05

Yechim:

$$1\text{ml} ----- 0.1\text{g (100mg)}$$

$$1000\text{ml} ----- x = 100\text{g}/400 = 0.25\text{mol (Fe}_2(\text{SO}_4)_3)$$



$$1\text{mol} ----- 2\text{mol}$$

$$0.25\text{mol} ----- x = 0.5\text{mol/l}$$

43. .0,1M li kuchsiz bir asosli kislota eritmasining pH qiymati 3 ga teng bo'lsa, kislotaning dissotsilanish darajasini (%) toping.

- A) 2 B) **1** C) 4 D) 3

Yechim:

$$\text{pH}=3 \Rightarrow [\text{H}^+] = 0.001\text{mol/l}$$

$$0.1\text{mol} ----- 100\%$$

$$0.001\text{mol} ----- x = 1\%$$

44. . 25 °C da tayyorlangan eritmaning pH qiymati pOH qiymatidan to'rt birlikka ko'p bo'lsa, quyidagi fikrlardan qaysilari to'g'ri?

a)  $[\text{H}^+] = 1 \cdot 10^{-5}$  b)  $[\text{OH}^-] = 1 \cdot 10^{-5}$

c) fenolftalein to'q qizil ranga kiradi;

d) metil zarg'aldog'i pushti ranga kiradi;

e)  $\text{pH} < 7$ ; f)  $[\text{OH}^-] > [\text{H}^+]$

- A) a, d, e B) a, c, e

- C) b, c, f** D) b, d, f

Yechim:

$$\text{pH}-\text{pOH}=4$$

$$\text{pH}+\text{pOH}=14$$

$$\text{pH}=9 \text{ pOH}=5$$

a) xato; b) tog'ri c) tog'ri -ishqoriy muhitda qizaradi.

d) xato- ishqoriy muhitda sariq e) xato  $\text{pH}>7$  f) tog'ri

Javob: b,c,f

45. 298 K haroratdagi 1M li XOH eritmasida  $\text{H}^+$  ionlarining konsentratsiyasi  $5 \cdot 10^{-10} \text{ M}$  bo'lsa, shu haroratdagi XOH asosning dissotsilanish konstantasini toping.

- A)  $2 \cdot 10^{-5}$  B)  $4 \cdot 10^{-5}$

- C)  $4 \cdot 10^{-10}$**  D)  $2 \cdot 10^{-10}$

Yechim:

$\text{OH}^-$  ni aniqlab olamiz;

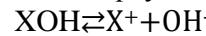
Suvning ion ko'paytmasi  $1 \cdot 10^{-14}$

$$[\text{H}^+][\text{OH}^-] = 1 \cdot 10^{-14}$$

$$5 \cdot 10^{-10} \cdot x = 1 \cdot 10^{-14}$$

$$x = 2 \cdot 10^{-5}$$

a ni aniqlaymiz.



$$1\text{mol} ----- 1\text{mol}$$

$$x ----- 2 \cdot 10^{-5}$$

$$x = 2 \cdot 10^{-5}$$

$$1\text{mol} ----- 1$$

$$2 \cdot 10^{-5} ----- x = 2 \cdot 10^{-5}$$

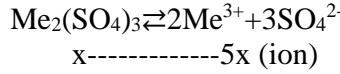
$$K = \alpha^2 \cdot C = (0.00002)^2 \cdot 0.1 = 4 \cdot 10^{-10}$$

46. 2 mol metall (III)-sulfat tuzi suvda eritildi. Eritmadagi tuz hosil qilgan ionlar va uning molekulalari yig'indisi 9,2 mol bo'lsa, metallni aniqlang.  $M(\text{Me}^{3+}) = 201,6 \text{ g}$ . (Gidroliz hisobga olinmasin.)

- A) xrom **B) temir**

C) aluminiy D) marganes

Yechim:



$$2-x+5x=9.2$$

$$4x=7.2 \quad x=1.8$$

$$1\text{mol} \text{-----} 2\text{mol } (\text{Me}^{3+})$$

$$1.8\text{mol} \text{-----} x=3.6\text{mol}$$

$$3.6\text{mol} \text{-----} 201.6\text{g}$$

$$1\text{mol} \text{-----} x=56 \text{ (Fe)}$$

47. Metall nitrat dissotsilanishidan

hosil bo'lgan ionlar soni 4,5 mol,

dissotsilanmagan molekulalar soni

$3.01 \cdot 10^{23}$  ta ekanligi ma'lum. Eritmadagi kationning massasi 60 g bo'lsa, necha gramm tuz suvda eritiganligini aniqlang.

(a = 75 %)

A) 328 B) 296 C) 202 D) 170

Yechim:

$$30.1 \cdot 10^{22} / 6.02 \cdot 10^{23} = 0.5 \text{mol} \text{-----} 25\%$$

$$2\text{mol} \text{-----} 100\%$$

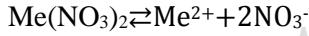
$$2m - 0.5m = 1.5m \text{ dissotsiyalangan.}$$

Masalani buyog'iga javobdan foydalanish zarur:

$$1.5\text{mol} \text{-----} 4.5\text{mol}$$

$$1\text{mol} \text{-----} x=3\text{mol } (\text{ion})$$

Javobda barcha tuzlar nitrat va metall ionlari xosil bo'ladi va metall II valentli bo'lganda 3 ta ion ajraladi.



$$1.5\text{mol} \text{---} 1.5\text{mol} \text{---} 3\text{mol}$$

$$1.5\text{mol} \text{-----} 60\text{g}$$

$$1\text{m} \text{-----} x=40\text{g } (\text{Ca})$$

$$\text{Ca}(\text{NO}_3)_2 \text{ 1mol} \text{-----} 164\text{g}$$

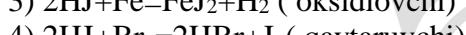
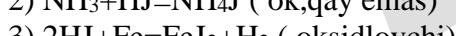
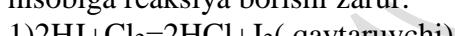
$$2\text{mol} \text{-----} x=328\text{g}$$

48. Vodorod yodid qaysi moddalar bilan qaytaruvchi sifatida reaksiyaga kirishadi?

1) xlor; 2) ammiak; 3) temir; 4) brom.

A) 1, 3 B) 1, 4 C) 2, 3 D) 2, 4

Javob: HJ Qaytaruvchi bo'lishi zarur, demak J<sup>-</sup> hisobiga reaksiya borishi zarur:



49. Elektron konfiguratsiyasi 2, 8, 18,

1 bo'lgan X kimyoviy elementning yuqori oksidlanish darajasini aniqlang.

A) +4 B) +3 C) +1 D) +2

Yechim: qavatlardagi elektron soni ko'rsatilgan.

$$2+8+18+1=29 \text{ ta e}^- \rightarrow \text{Cu}$$

Cu eng yuqori oksidlanish darajasi +2

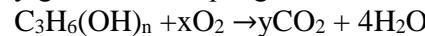
50. C<sub>2</sub>O<sub>4</sub><sup>2-</sup>; MnO<sub>4</sub><sup>-</sup>; PO<sub>4</sub><sup>3-</sup> ionlaridagi C, Mn, P ning oksidlanish darajalarini aniqlang.

A) +6, +7, +5 B) +3, +7, +5

C) +4, +8, +8 D) +3, +6, +5

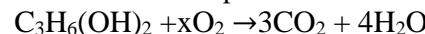
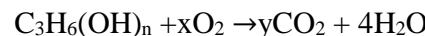
Javob: +3; +7; +5

51. Quyidagi reaksiya uchun koeffitsiyentlar yig'indisini aniqlang.



A) 12 B) 10 C) 11 D) 13

Yechim:



Kislород sonini tenglashtiramiz.

$$2+2x=3*2+4*1$$

$$2x=8 \quad x=4$$



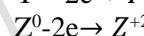
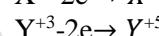
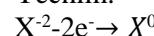
$$1+4+3+4=12$$

52. X<sup>-2</sup>, Y<sup>+3</sup>, Z<sup>0</sup> zarrachalari ikkitadan elektron chiqarsa, qanday zarracha holiga o'tadi?

A) 0; +5; +2 B) 0; +1; -2

C) -4; +5; +2 D) -4; +1; -2

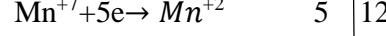
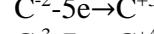
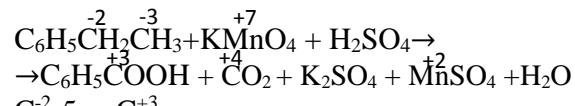
Yechim:



53. C<sub>6</sub>H<sub>5</sub>CH<sub>2</sub>CH<sub>3</sub> + KMnO<sub>4</sub> + H<sub>2</sub>SO<sub>4</sub> → Oksidlanish-qaytarilish reaksiyasini tugallang hamda chap tomondagи koeffitsiyentlar yig'indisini aniqlang.

A) 35 B) 84 C) 50 D) 56

Organik moddada faqat oksidlanish darajasi o'zgargan C larni hisoblaymiz.



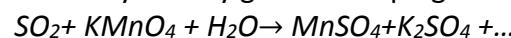
Endi reaksiyani tenglashtiramiz.



$$5+12+18=35 \text{ (chap)} \quad 5+5+6+12+28=56 \text{ (o'ng)}$$

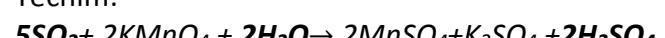
54. Quyidagi reaksiyani tugallang va tenglang.

Molekular tuzilishli moddalar oldidagi koeffitsiyentlar yig'indisini toping.



A) 5 B) 9 C) 14 D) 6

Yechim:



$$5+2+2=9$$



55.  $H_2Se$  sulfat kislota ishtirokida kaliy bixromat bilan oksidlandi. 14,7 g oksidlovchi reaksiyaga kirishganligi ma'lum bo'lsa, hosil bo'lgan  $Se$  miqdorini (mol) hisoblang.

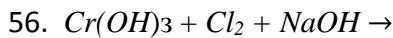
A) 0,25 B) 0,3 C) **0,15** D) 0,2

Yechim: faqat oksidlovchi va qaytaruvchidan foydalanamiz.



$$294g \text{-----} 3\text{mol}$$

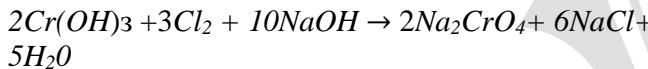
$$14.7g \text{-----} x=0.15\text{mol}$$



Reaksiyada 17,55 g  $NaCl$  hosil bo'lsa, sarflangan oksidlovchi massasini (g) hisoblang.

A) 14,2 B) **10,65** C) 7,1 D) 17,75

Yechim:



$$213g \text{-----} 351g(NaCl)$$

$$x \text{-----} 17,55g$$

$$x=10.65g$$

57. 100 g 45 % li natriy yodid eritmasining ma'lum qismi elektroliz qilindi. Hosil bo'lgan eritmaga yetarli miqdorda kumush nitrat eritmasi quyiganda umumiyl massasi 58,6 g cho'kma ajraldi. Elektroliz uchun sarflangan faradey miqdorini aniqlang.

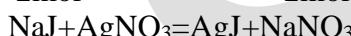
A) 0,05 C) 0,2 B) **0,1** D) 0,15

Yechim:

$$100g \cdot 0.45 = 45g / 150g = 0.3\text{mol NaJ}$$



$$2\text{mol} \text{-----} 2\text{mol} \text{-----} 2F$$



$$1\text{mol} \text{-----} 235g$$

$$x \text{-----} 235x$$



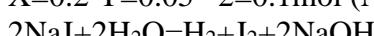
$$2\text{mol} \text{-----} 232g$$

$$2y \text{-----} 232y$$

$$X + 2y = 0.3\text{mol} (\text{NaJ va NaOH})$$

$$235x + 232y = 58.6 (\text{AgJ va Ag}_2\text{O})$$

$$X = 0.2 \quad Y = 0.05 \quad *2 = 0.1\text{mol} (\text{NaOH})$$



$$2\text{mol} \text{-----} 2\text{mol} \text{-----} 2F$$

$$0.1\text{mol} \text{-----} x=0.1F$$

58. 200 g 5% li natriy hidroksid eritmasi elektroliz qilinishi natijasida molyal konsentratsiyasi 2,5 mol/kg bo'lgan eritma hosil bo'ldi. Elektroliz jarayoni uchun sarflangan faradey miqdorini aniqlang.

A) 2,5 B) 7,5 C) 5 D) **10**

Yechim:

$$200g * 0.05 = 10g / 40 = 0.25\text{mol}$$

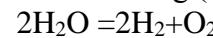
$$200g - 10 = 190g (\text{H}_2\text{O})$$

$$1000g \text{-----} 2.5\text{mol}$$

$$x \text{-----} 0.25\text{mol}$$

$$x = 100g (\text{H}_2\text{O} - \text{qolgan})$$

$$190 - 100 = 90g (\text{elektroliz bo'lgan suv})$$



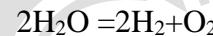
$$36g \text{-----} 4F$$

$$90g \text{-----} x=10F$$

58.1 . 200 g 5 % li natriy hidroksid eritmasi 10 F tok bilan elektroliz qilindi. Hosil bo'lgan eritmaning molyal konsentratsiyasini (mol/kg) hisoblang.

A) **2,5** B) 5 C) 0,25 D) 0,5

Yechim:



$$36g \text{-----} 4F$$

$$90g = x \text{-----} 10F$$

$$200g * 0.05 = 10g / 40 = 0.25\text{mol}$$

$$200g - 10 = 190g (\text{H}_2\text{O})$$

$$190 - 90 = 100g \text{ suv qolgan.}$$

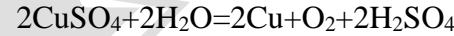
$$100g \text{-----} 0.25\text{mol}$$

59. Mis (II)-sulfat eritmasi tuz tugaguncha elektroliz qilinganda eritma massasi  $2/29$  qismiga kamaydi. Daslabki eritma konsentratsiyasini (mol/kg) aniqlang.

A) 1,5 B) 2 C) **1** D) 2,5

Yechim:

Reaksiya bo'yich olamiz, tenglamasiz ishlaymiz.



$$320g \text{-----} 128g - 32g = 160g (\text{jami mahsulot})$$

$$2 \text{-----} 160g$$

$$29 \text{-----} x = 2320g (\text{jami eritma})$$

$$2320 - 320 = 2000g (\text{H}_2\text{O})$$

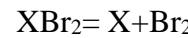
$$2000g \text{-----} 2\text{mol} (320g)$$

$$1000g \text{-----} x = 1\text{mol/kg}$$

60.  $XBr_2$  va  $YBr_3$  suyuqlanmalari solingan idishlar ketma-ket tok manbaiga ulangan. Birinchi idish katodida 3,6 mol X va ikkinchi idish katodida 134,4 g Y hosil bo'ldi. Y elementning nisbiy atom massasini aniqlang.

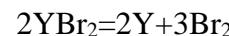
A) 70 B) 84 C) 27 D) **56**

Yechim:



$$1\text{mol} \text{-----} 2F$$

$$3.6\text{mol} \text{-----} x = 7.2F \text{ tok sarflangan.}$$



$$2\text{mol} \text{-----} 6F$$

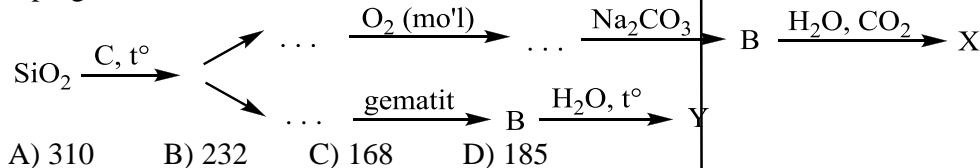
$$2.4\text{mol} \text{-----} x = 7.2F$$

Demak Y metall 2.4mol ajralgan.

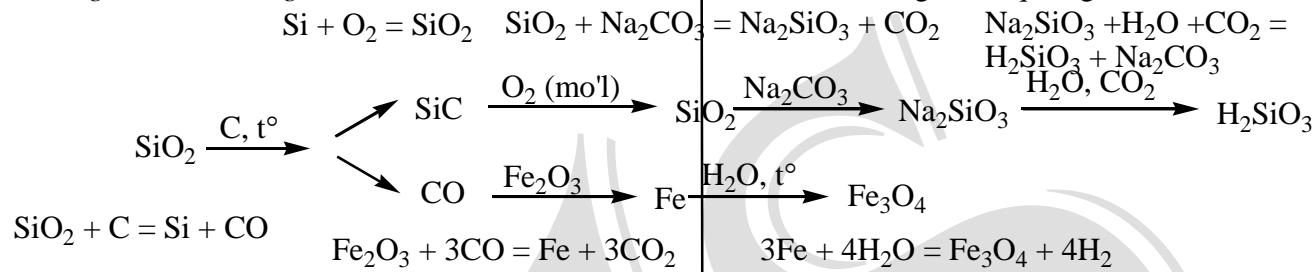
2.4mol-----134.4g  
1mol-----x=56g/mol

61.

Quyidagi o'zgarishlar asosida Si tutgan X va Fe tutgan Y moddalarning molar massalari (g/mol) yig'indisini toping.

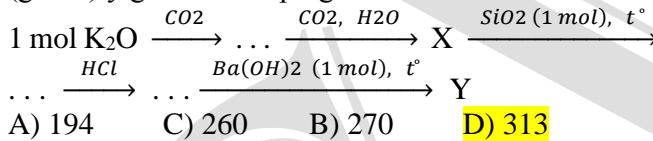


Yechim: hosil bo'lgan moddalarni yozib chiqamiz, reaksiyalarni yozishda berilgan miqdorlar va qaysi yo'naliш ekaninga e'tibor bering. Modda tabiatii, molekular va nomolekular ekaniga ham qarang



$$\text{H}_2\text{SiO}_3 = 78 \text{ g/mol} \quad \text{Fe}_3\text{O}_4 = 232 \text{ g/mol}$$

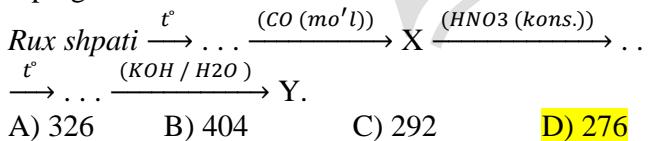
62. Quyidagi o'zgarishlar asosida uglerod tutgan X va kremniy tutgan Y moddalarning molar massalari (g/mol) yig'indisini toping.



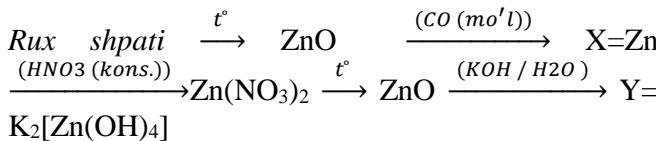
Yechim:

- 1)  $\text{K}_2\text{O} + \text{CO}_2 = \text{K}_2\text{CO}_3$
- 2)  $\text{K}_2\text{CO}_3 + \text{CO}_2 + \text{H}_2\text{O} = 2\text{KHCO}_3$  (2mol hosil bo'lgan)  $\text{X} = \text{KHCO}_3 = 100 \text{ g/mol}$
- 3)  $2\text{KHCO}_3 + \text{SiO}_2 = \text{K}_2\text{SiO}_3 + 2\text{CO}_2 + \text{H}_2\text{O}$
- 4)  $\text{K}_2\text{SiO}_3 + 2\text{HCl} = 2\text{KCl} + \text{H}_2\text{SiO}_3$
- 5)  $\text{H}_2\text{SiO}_3 + \text{Ba(OH)}_2 = \text{BaSiO}_3 + 2\text{H}_2\text{O}$   $\text{Y} = \text{BaSiO}_3 = 213 \text{ g/mol} + 100 = 313 \text{ g/mol}$

63. Quyidagi o'zgarishlar asosida rux tutgan X va Y moddalarning molar massalari (g/mol) yig'indisini toping.



Yechim:



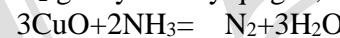
64. Qizdirilgan mis (II)-oksidi ustidan 44,8 1 (n.sh.) ammiak gazi o'tkazildi. Olingan gazlar aralashmasi (n.sh.) HCl eritmasidan o'tkazilganda 5,6 1 (n.sh.)

$$78 + 232 = 310 \text{ g}$$

gaz kislota eritmasiga yutilmay qoldi. Ammiakning qancha qismi CuO bilan ta'sirlashgan?

- A) 1/4      B) 1/3      C) 2/3      D) 3/4

Kislota eritmasiga reaksiyadan ajralib chiqayotgan N<sub>2</sub> gazi yutilmay qolgan, ortgan NH<sub>3</sub> esa yutiladi



$$44.81 ----- 22.41$$

$$11.21 = x ----- 5.61$$

$$11.21 \text{ yutilgan, } 44.81 \text{ jami}$$

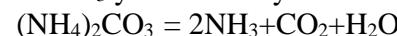
$$\text{Javob: } 11.2/44.8 = 1/4$$

65. 8,83 g ammoniy karbonat va natriy nitrat aralashmasi to'liq parchalanganda 4,83 g qattiq qoldiq olindi. Dastlabki aralashmadagi azot atomlari sonini aniqlang.

- A) 0,34·N<sub>A</sub>      B) 0,13·N<sub>A</sub>      C) 0,18·N<sub>A</sub>      D) 0,1 ·N<sub>A</sub>

(NH<sub>4</sub>)<sub>2</sub>CO<sub>3</sub> x moli 96x -massasi      2x - N atom moli

NaNO<sub>3</sub> y-moli      85y-massasi      y - N atom moli



$$96x$$



$$170 ----- 138$$

$$85y ----- ? = 69y$$

$$96x + 85y = 8.83$$

$$69y = 4.83$$

$$X = 0.03 \quad y = 0.07$$

$$2 * 0.03 + 0.07 = 0.13 \text{ N}_A$$

$$\text{Javob: } 0.13 \text{ N}_A$$

66. Sulfit angidrid, kislород ва neondan iborat aralashmaning o'rtacha molar massasi 40 g/mol. Aralashma (V<sub>2</sub>O<sub>5</sub> ishtirokida) qizdirilganda yakuniy aralashmada ikki xil gaz qoldi. Oxirgi aralashmaning o'rtacha molar massasini



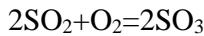
(g/mol) hisoblang.

- A) 50    B) 60    C) 40    D) 30

$\text{xSO}_2 + \text{yO}_2 \rightarrow \text{zNe}$  reaksiyaga kirishib 2 xil gaz qolishi uchun  $x/y = 2$  bolishi kerak shunda ular qoldiqsiz reaksiyaga kirishadi, demak  $x=2$   $y=1$  deb olamiz.

$$\frac{2 * 64 + 1 * 32 + 20z}{2 + 1 + z} = 40$$

$$Z=2$$



$$2-----1-----2$$

Qolgan aralashmada 2 mol  $\text{SO}_3$  va 2 mol Ne bor

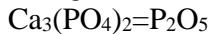
$$\frac{2 * 80 + 2 * 20}{2 + 2} = 50$$

Javob: 50

67. 200 kg fosforit talqoni tarkibida fosfor tutgan birikmaning massa ulushi 77,5 % bo'lsa, necha kilogramm pretsipitat fosforit talqoni o'rniga ishlatalishi mumkin?

- A) 86    B) 172    C) 344    D) 258

$$200\text{kg} * 0.775 = 155 \text{ kg } \text{Ca}_3(\text{PO}_4)_2$$



$$310\text{kg}-----142 \text{ kg}$$

155kg-----x=71 kg ozuqa ekement massasi



$$344\text{kg}-----142 \text{ kg}$$

$$172 \text{ kg}=x-----71 \text{ kg}$$

Javob: 71 kg

68. 25,6 g kislotali oksid ( $\text{EO}_2$ ) natriy gidroksid eritmasiga to'liq yuttilolganda teng mol miqdordagi 46 g kislotali va o'rta tuz hosil bo'ldi. O'rta tuzning massasini (g) hisoblang.

- A) 27,6    B) 24    C) 25,2    D) 20



$$X+32-----72+x-----94+x$$

$$2(X+32)-----25.6$$

$$72+x+94+x-----46$$

$$X=32$$



$$128\text{gr}-----126\text{gr}$$

$$25.6\text{gr}-----x=25.2 \text{ gr}$$

Javob: 25.2

69. 98 g 20 %li ortofosfat kislotaning qaynoq eritmasida 7,1 g fosfor (V)-oksid eritildi. Olingan eritmaga 24 g  $\text{NaOH}$  qo'shilganda hosil bo'lgan tuz massasini (g) hisoblang.

- A) 32    B) 36    C) 42,6    D) 49,2

$$98 * 0.2 = 19.6 \text{ gr } \text{H}_3\text{PO}_4 \quad 19.6 / 98 = 0.2 \text{ mol}$$



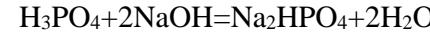
$$142 \text{ g}-----2 \text{ mol}$$

$$7.1 \text{ g}-----x=0.1 \text{ mol} \quad 0.2 + 0.1 = 0.3 \text{ mol } \text{H}_3\text{PO}_4$$

$$24/40 = 0.6 \text{ mol } \text{NaOH}$$

$$0.3-----0.6$$

$$1-----x=2 \text{ mol}$$



$$1 \text{ mol}-----2 \text{ mol}-----142 \text{ gr}$$

$$0.3 \text{ m}-----x=0.6 \text{ m}-----x=42.6 \text{ g}$$

Javob: 42.6

70. 1 mol mis (II)-nitrat termik parchalanganda 2,5 mol kislород atomi tutgan qattiq qoldiq olindi.

Reaksiyada ajralgan gaz hajmini (1, n.sh.) hisoblang.

- A) 19,6    B) 39,2    C) 16,8    D) 33,6



$$2x \text{ mol}-----2x \text{ O}-----(4+1)=5x \text{ gaz moli}$$



$$Y \text{ mol}-----6 \text{ y O}$$

$$2x+y=1$$

$$2x+6y=2.5$$

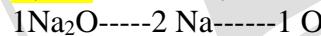
$$X=0.35 \quad y=0.3$$

$$5x=5*0.35=1.75*22.41=39.21$$

Javob: 39.21

71. 29,6 g natriy oksidi va peroksididan iborat aralashmada Na va O atomlari soni nisbati 8:7 bo'lsa, aralashmadagi natriy oksidning massasini (g) toping.

- A) 6,2    B) 12,4    C) 24,8    D) 9,3



$$x \text{ Na}_2\text{O}_2-----2x \text{ Na}-----2x \text{ O}$$

$$2+2x-----8$$

$$1+2x-----7 \quad x=3$$



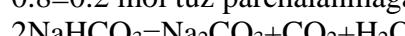
$$62\text{g}-----234 \text{ g}-----=296\text{g}$$

$$6.2=x-----29.6 \quad \text{Javob: 6.2 g}$$

72. Natriy gidrokarbonat 80 % unum bilan parchalanganda 29,6 g qattiq qoldiq olindi. Reaksiyada ajralgan  $\text{CO}_2$  hajmini (1, n.sh.) aniqlang.

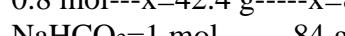
- A) 4,48    B) 3,36    C) 6,72    D) 2,24

1 mol tuz olamiz.  $1 * 0.8 = 0.8$  moli parchalangan.  $1 - 0.8 = 0.2$  mol tuz parchalanmagani.



$$2 \text{ mol}-----106\text{g}-----22.4 \text{ l}$$

$$0.8 \text{ mol}-----x=42.4 \text{ g}-----x=8.96 \text{ l}$$



$$0.2 \text{ mol}-----x=16.8 \text{ g}$$

$$42.4 + 16.8 = 59.2 \text{ gr qoldiq} \quad 8.96 \text{ l gaz}$$

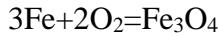
$$59.2 \text{ g}-----8.96 \text{ l}$$

$$29.6 \text{ g}-----x=4.48 \text{ l} \quad \text{javob: 4.48 l}$$

73. Temirning yarmi kislородда qizdirilganda 46,4 g qo'sh oksid hosil bo'ldi. Qolgan yarmini eritish uchun qancha hajm (litr) 0,4 M li xlорid kislota eritmasi talab etiladi?



A) 2      B) 1      C) 1,5      D) 3



$$3\text{mol} \cdots \cdots 232 \text{ g}$$

$$0.6 \text{ m} = x \cdots \cdots 46.4 \text{ g}$$

Ikkalasi teng demak 0.4 mol



$$1\text{m} \cdots \cdots 2 \text{ mol}$$

$$0.6 \text{ m} \cdots \cdots x = 1.2 \text{ mol}$$

$$0.4\text{M} \cdots \cdots 1 \text{ l}$$

1.2 m  $\cdots \cdots$  x = 3 l javob: 3 l

74. Mis (I) – oksid va mis (I) – sulfidlar aralashmasi o‘zaro ta’sirlashganda tarkibida 0,8 mol Cu va 3,2 g S atomlari tutgan qattiq qoldiq olindi. Reaksiyada ajralgan gaz hajmini n.sh. da aniqlang.

A) 2,24 B) 1,12 C) 3,36 D) 4,48

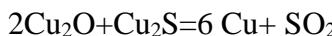
Qoldiq tarkibida S borligi sababi  $\text{Cu}_2\text{S}$  kop olingan  $3.2/32=0.1\text{S}$ . 0.8 m Cu 0.1m S



$$2 \text{ mol Cu} \cdots \cdots 1\text{S}$$

$$0.2 \text{ mol Cu} \cdots \cdots 0.1 \text{ S}$$

$0.8 - 0.2 = 0.6 \text{ mol Cu}$  reaksiyadan hosil bo’lgan.



$$6 \text{ mol} \cdots \cdots 22.4 \text{ l}$$

0.6 m  $\cdots \cdots$  x = 2.24 l javob: 2.24 l

75. 0,5 mol mis nitrat kislota eritmasida eritilishi natijasida  $D_{(\text{He})} = 8,5$  bo’lgan gazlar aralashmasi hosil bo’ldi. Reaksiyada sarflangan nitrat kislota miqdorini (mol) hisoblang.

A) 1,5      B) 1,4      C) 1,2      D) 1,3

$$D_{(\text{He})} = 8,5 = 8,5 * 4 = 34$$

$$X + y = 1$$

$$46x + 30y = 34 \quad x = 0.25 \quad y = 0.75$$



$$1 \text{ m} \cdots \cdots 4 \text{ mol} \cdots \cdots 2 \text{ mol}$$

$$0.125m = x - 0.5 \text{ m} \cdots \cdots 0.25 \text{ m}$$



$$3 \text{ m} \cdots \cdots 8 \text{ m} \cdots \cdots 2 \text{ m}$$

$$1.125m = x - 3 \text{ m} = x \cdots \cdots 0.75 \text{ m}$$

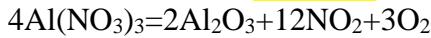
$$0.125 + 1.125 = 1.25 \text{ mol Cu} \quad 0.5 + 3 = 3.5 \text{ mol HNO}_3$$

$$1.25 \text{ m Cu} \cdots \cdots 3.5 \text{ m HNO}_3$$

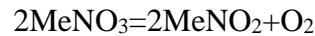
$$0.5 \text{ m} \cdots \cdots \cdots \cdots x = 1.4 \text{ m}$$

76. Alyuminiy nitrat va ishqoriy metall nitratidan iborat aralashma  $400^{\circ}\text{C}$  gacha qizdirilganda 34,2 g qattiq qoldiq hosil bo’ldi. Ajralgan gazlar aralashmasi 200 g 24 %li natriy gidroksid eritmasiga yuttiliganda 0,1 mol gaz yutilmay qoldi. Metallni aniqlang.

A) litiy B) kaliy C) natriy D) rubidiy

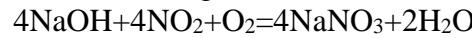


$$852x \cdots \cdots 204x \cdots \cdots 12x \cdots \cdots 3x$$



$$2 \text{ m} \cdots \cdots 2 \text{ m} \cdots \cdots 1 \text{ m}$$

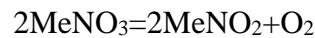
$$200 * 0.24 = 48 \text{ g} \quad 48/40 = 1.2 \text{ mol NaOH}$$



$$4 \text{ mol} \cdots \cdots 4 \cdots \cdots 1$$

$$1.2 \text{ mol} \cdots \cdots x = 1.2 \text{ m} \cdots \cdots x = 0.3$$

Demak  $\text{MeNO}_3$  dan chiqqan gaz yutilmay qolar ekan.



$$2 \text{ m} \cdots \cdots 2 \text{ m} \cdots \cdots 1 \text{ m}$$

$$0.2 \text{ m} \cdots \cdots 0.2 = x \cdots \cdots 0.1 \text{ m}$$



$$852 \cdots \cdots 204 \cdots \cdots 12 \cdots \cdots 3$$

$$20.4 = x - 1.2$$



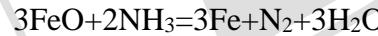
$$0.2x + 20.4 = 34.2 \quad x = 69$$

$$\text{MeNO}_2 = x + 14 + 32 = 69 \quad x = 23$$

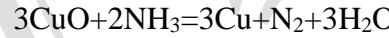
77. 60 g  $\text{FeO}$  va  $\text{CuO}$  dan iborat aralashma mo’l miqdordagi ammiak bilan qaytarildi. Olingan metallar 588 g 30% li  $\text{HNO}_3$  kislota eritmasi bilan to’liq ta’sirlasha olsa,  $\text{CuO}$  massasini (g) aniqlang. (Reaksiya natijasida NO hosil bo’ladi)

A) 12      B) 24      C) 8      D) 16

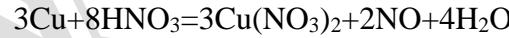
$$588 * 0.3 = 176.4 \quad 176.4 / 63 = 2.8 \text{ mol}$$



$$216x \cdots \cdots \cdots \cdots 3x$$



$$240y \cdots \cdots \cdots \cdots 3y$$



$$3 \cdots \cdots 8$$

$$3y \cdots \cdots ? = 8y$$



$$1 \cdots \cdots 4$$

$$3x \cdots \cdots ? = 12x$$

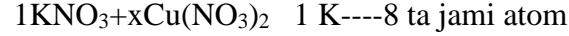
$$240y + 216x = 60$$

$$8y + 12x = 2.8 \quad y = 0.1$$

$$240x = 240 * 0.1 = 24 \text{ g}$$

78.  $n(\text{O}) = 1,5$  mol bo’lgan  $\text{KNO}_3$  va  $\text{Cu}(\text{NO}_3)_2$  aralashmasida kaliy atomlari umumiyligi atomlarning  $1/8$  qismini tashkil etadi. Ushbu aralashma to’liq parchalanganda hosil bo’lgan gazlar hajmini (1, n.sh.) hisoblang.

A) 4,48 B) 6,72 C) 11,2 D) 8,96



$$5 \text{ atom} \cdots \cdots 9x \text{ atom} \quad 5 + 9x = 8 \quad x = 0.33333$$

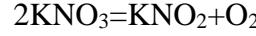


$$9\text{O} \cdots \cdots 6\text{O} \cdots \cdots 15\text{O}$$



$$3 \text{ mol} \cdots \cdots 1 \text{ mol} \cdots \cdots 15\text{O}$$

$$0.3 \text{ m} = x \cdots \cdots 0.1 \text{ m} = x \cdots \cdots 1.5 \text{ O}$$



$$2 \text{ mol} \cdots \cdots 22.4 \text{ l}$$

$$\begin{aligned}0.3 \text{ m} &-----x = 3.36 \text{ l} \\2\text{Cu(NO}_3)_2 &= 2\text{CuO} + 4\text{NO}_2 + \text{O}_2 \\2 \text{ mol} &-----112 \text{ l} \\0.1 \text{ mol} &-----x = 5.6 \text{ l} \\3.36 + 5.6 &= 8.96 \text{ l}\end{aligned}$$

79. Monogalogenalken tarkibida 7 ta vodorod atomlari mavjud bo'lsa, unga to'g'ri keladigan ochiq zanjirli, uglerod atomlari tarmoqlanmagan izomerlar soni eng ko'pida nechta? (Fazoviy izomerlar hisoblanmasin.)

- A) 6**      B) 7      C) 5      D) 8

Yechim:

$$C_nH_{2n-1}X \quad (X - \text{galogen, Cl} - \text{xlor})$$

$$2n - 1 = 7 \Rightarrow n = 4$$



- 1)  $CH_2 = CH - CH_2 - CH_2(Cl)$
- 2)  $CH_2 = CH - CH(Cl) - CH_3$
- 3)  $CH_2 = C(Cl) - CH_2 - CH_3$
- 4)  $CH(Cl) = CH - CH_2 - CH_3$
- 5)  $CH_3 - CH = CH - CH_2(Cl)$
- 6)  $CH_3 - CH = C(Cl) - CH_3$

Javob: A) 6

80.  $Fe^{2+}$  ioniga izoelektron bo'lgan organik zarrachalarni ko'rsating.

- 1) propen; 2) xlormetan; 3)  $+CH_2Cl$ ; 4) etanol
- A) 2; 3      B) 2; 4      **C) 1; 3**      D) 1; 4

Yechim:

$$e(Fe^{2+}) = 26 - 2 = 24$$

$$1) e(C_3H_6) = 3 \cdot 6 + 6 \cdot 1 = 24$$

$$2) e(CH_3Cl) = 6 + 3 \cdot 1 + 17 = 26$$

$$3) e(+CH_2Cl) = 25 - 1 = 24$$

$$4) e(C_2H_5OH) = 2 \cdot 6 + 5 \cdot 1 + 8 + 1 = 26$$

Javob: C) 1; 3

81. Molar massasi 86 g/mol bo'lgan uglevodorodning ikkilamchi uglerod tutgan izomerlar soni eng ko'pida nechta?

- A) 4      B) 3      **C) 5**      D) 2

Yechim:

Uglevodorodlarning alkanlar sinfiga mos keladi  
 $C_nH_{2n+2}$      $M = 14n + 2 = 86 \Rightarrow n = 6$      $C_6H_{14}$

- 1)  $CH_3CH_2CH_2CH_2CH_2CH_3$
- 2)  $CH_3CH_2CH_2CH(CH_3)CH_3$
- 3)  $CH_3CH_2CH(CH_3)CH_2CH_3$
- 4)  $CH_3CH_2C(CH_3)_2CH_3$
- 5)  $CH_3CH(CH_3)CH(CH_3)CH_3$

Barcha izomerlari tarkibida ikkilamchi uglerod tutgan

Javob: C) 5

82. Agar alkan molekulasidagi uglerod atomlari orasidagi  $\sigma$ -bog'lar soni m ga teng bo'lsa, molekuladagi jami atomlar sonini aniqlang

- A) 3m+4      B) 3m+2      C) 3m+1      **D) 3m+5**

Yechim:

$$N(C - C) = m \quad C_{m+1}H_{2m+4}$$

$$N(\text{atom}) = 3m+5$$

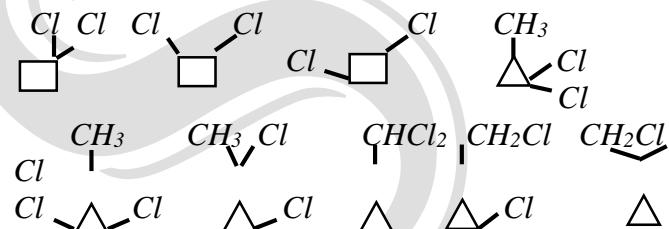
Javob: D) 3m+5

83. . Dixlorsikloalkan tarkibida 6 ta H atomi mavjud bo'lsa, uning siklik izomerlari soni eng ko'pi bilan nechta bo'lishi mumkin? (Fazoviy izomerlar hisobga olinmasin.)

- A) 9**      B) 8      C) 5      D) 7

Yechim:

$$C_nH_{2n-2}Cl_2 \quad 2n - 2 = 6 \Rightarrow n = 4$$

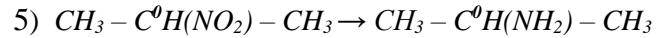
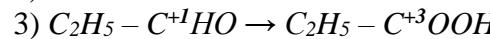
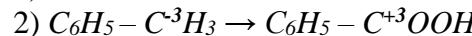


84. Quyidagi qaysi o'zgarishlarda molekula tarkibidagi uglerod qaytariladi?

- 1) etanal  $\rightarrow$  etanol; 2) toluol  $\rightarrow$  benzoy kislota;
- 3) propanal  $\rightarrow$  propan kislota;
- 4) propen kislota  $\rightarrow$  propan kislota;
- 5) 2-nitropropan  $\rightarrow$  2-aminopropan;
- 6) siklogeksen  $\rightarrow$  siklogeksan.

- A) 1, 4, 6**      B) 1, 3, 5      C) 2, 3, 6      D) 2, 4, 6

Yechim:



Javob: A) 1, 4, 6

85. . 2,3,3-trimetil-2-xlorbutanga natriy gidroksidning spirtdagi eritmasi bilan ta'sirlashishidan olingan mahsulotga dastlab vodorod bromid, so'ngra natriy metali ta'sir ettirildi. Oxirgi moddaning nomini aniqlang.

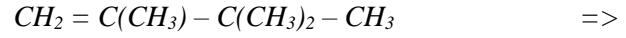
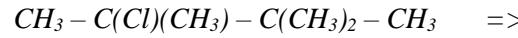
- A) 2,2,3,3-tetrametilgeksan

- B) 2,2,3,3,4,4,5,5-oktamatilgeksan**

- C) 2,2,3,3,5,5-geksametilgeksan

- D) 2,3,3-trimetilbuten-1

Yechim:







A) 2    B) 2,5    C) 1,25    D) 4

**Yechim:**

$$\text{CH}_4 \times \text{C}_2\text{H}_2 \quad 12+24x/4+2x=4 \quad x=0.25$$

$$\text{C}_2\text{H}_2 + 2\text{Br}_2 = \text{C}_2\text{H}_2\text{Br}_4 \quad 1.25/1=\underline{\underline{1.25}}$$

94. Benzol va stioldan iborat aralashma 200 g 8 %li bromli suv eritmasini rangsizlantiradi. Xuddi shunday aralashma to‘liq yondirilganda 2 mol karbonat angidrid ajraladi. Dastlabki aralashma tarkibidagi benzol miqdorini (mol) hisoblang.

**A) 0,2    B) 0,3    C) 0,1    D) 0,4**

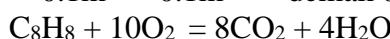
**Yechim:** bromli suvni faqat stirol rangsizlantiradi.

$$200*0.08 = 16\text{g} / 160 = 0.1\text{mol}$$



$$1\text{mol} \dots 1\text{mol}$$

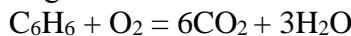
$$0.1\text{m} \dots 0.1\text{m} \quad \text{demak } 0.1\text{mol stirol bor.}$$



$$1\text{mol} \dots 8\text{m}$$

$$0.1\text{mol} \dots x = 0.8\text{mol stioldan hosil bo'ladi.}$$

$$2\text{m} - 0.8\text{m} = 1.2\text{mol CO}_2 \text{ benzoldan hosil bo'lgan.}$$



$$1\text{mol} \dots 6\text{mol}$$

$$x \dots 1.2\text{mol}$$

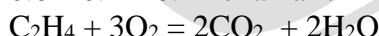
$$x=0.2\text{mol Benzol mavjud.}$$

95. . 0,6 mol alkan va etilen aralashmasi teng ikki qismga ajratildi. Birinchi qismi bromli suv solingan idishdan o’tkazilganda idish massasi 2,8 g ga ortdi. Ikkinci qismi to‘liq yondirilganda 14,4 g suv hosil bo’ldi. Dastlabki aralashmadagi alkanning massasini (g) hisoblang.

**A) 12    B) 17,6    C) 6    D) 8,8**

**Yechim:**  $2.8/28=0.1\text{mol etilen bor yarmida, jami } 0.2\text{mol bor aralashmada.}$

$$0.6 - 0.2 = 0.4\text{mol alkan} / 2 = 0.2\text{mol yarmida.}$$

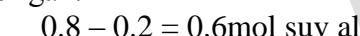


$$1\text{mol} \dots 2\text{mol}$$

$$0.1\text{mol} \dots 0.2\text{mol}$$

$$14.4/18 = 0.8\text{mol suv hosil bo'lgan.}$$

$$0.8 - 0.2 = 0.6\text{mol suv alkandan chiqgan.}$$



$$0.2\text{m} \dots 0.8\text{m}$$

$$1\text{m} \dots x=4\text{mol}$$

$$n+1=4$$

$$n=3 \quad \text{C}_3\text{H}_8,$$

$$44 * 0.4 = 17.6\text{g alkan.}$$

96. Metan, etin va etandan iborat aralashmani gidrogenlash uchun sarflangan vodorod hajmi aralashma hajmiga teng. Xuddi shunday aralashmani yoqish uchun sarflangan kislород hajmi aralashma hajmidan 2,55 marta ko‘p bo’lsa,

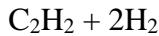
dastlabki gazlar aralashmasidagi  $\varphi(\text{CH}_4)$  ni aniqlang.

**A) 0,3    B) 0,2    C) 0,4    D) 0,25**

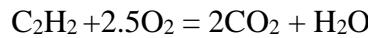
**Yechim:**



Gidrogenlashga ham shuncha  $\text{H}_2$  sarflanadi.

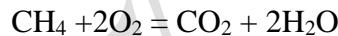


$$0.5\text{m} \dots 1\text{m} \quad \text{asetelen } 0.5\text{mol.}$$

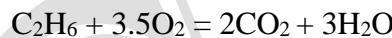


$$1\text{m} \dots 2.5\text{m}$$

$$0.5\text{m} \dots x = 1.25\text{mol}$$



$$x \dots 2\text{x}$$



$$y \dots 3.5y$$

$$x+y = 0.5\text{mol}$$

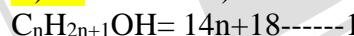
$$2x+3.5y = 1.3\text{m}$$

$$y=0.2$$

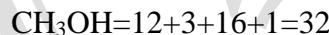
$$x=0.3$$

97. To‘yingan bir atomli spirt molekulasiда kislородning massa ulushi 0,5 ga teng bo’lsa, uning nisbiy molekular massasini hisoblang.

**A) 32    B) 74    C) 60    D) 46**

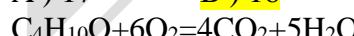


$$16 \dots 0.5 \quad x=1$$



98. 1 mol butanolning yonish tenglamasidagi koeffitsiyentlar yig’indisini toping.

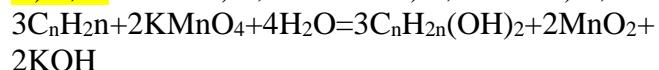
**A) 17    B) 16    C) 14    D) 15**



$$1+6+4+5=16$$

99. Kaliy permanganatning neytral eritmasi orqali eten va propen aralashmasi o’tkazilganda 1,74 g cho’kma olindi. Hosil bo’lgan spirtlar toza holda ajratib olindi va 1,15 g Na bilan ishlandi. Reaksiyada ajralgan vodorod hajmini (l, n.sh.) aniqlang.

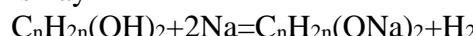
**A) 0,56    B) 0,112    C) 0,336    D) 0,672**



$$3 \text{ mol spirt} \dots 174 \text{ g cho'kma}$$

$$0.03 \text{ mol} \dots x = 1.74 \text{ g}$$

Reaksiyada Na kam bo’lganligi uchun Na orqali ishlaymiz



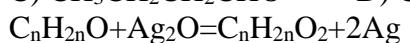
$$1 \text{ mol} \dots 46 \text{ g} \dots 22.4 \text{ l}$$

$$1.15 \text{ g} \dots x = 0.56 \text{ l}$$

100. Aldegid kumush oksidining ammiakli eritmasida oksidlanishidan 32,4 g cho’kma

va kislota hosil bo'ldi. Ushbu kislota propanol-2 bilan  $H_2SO_4$  ishtirokida reaksiyaga kirishganda 17,4 g tegishli murakkab efir hosil bo'ldi. Reaksiya uchun olingan aldegidni aniqlang.

- A) HCHO      B) CH<sub>3</sub>CH<sub>2</sub>CHO  
 C) CH<sub>3</sub>CH<sub>2</sub>CH<sub>2</sub>CHO      D) CH<sub>3</sub>CHO



1 mol-----216 g

0.15 mol·x 32.4

$\text{C}_2\text{H}_5\text{O}_2 + \text{CaH}_5\text{OH} \rightarrow \text{C}_2\text{H}_5\text{OOC}\text{CaH}_5$

$$C_nH_{2n}O_2 + C_3H_7OH \rightarrow C_nH_{2n-1}COOC_3H_7$$

0.15 mol-----1/

1 mol-----x=116 gr

$$\text{C}_n\text{H}_{2n-1}\text{OOC}_3\text{H}_7 = 14x - 1 + 32 + 12 \cdot 3 + 7 = 116 \quad x=3$$

$$\text{CH}_3\text{CH}_2\text{CHO}$$