

10 класс

Тестовое задание:

1б, 2д, 3в, 4а, 5д, 6в, 7в, 8г, 9е, 10в, 11в, 12г, 13д, 14е, 15б, 16е, 17а, 18д, 19д, 20д.

Задача 10-1

а) $Z^*(\text{Na}) = 2.2$; $Z^*(\text{Mg}) = 2.8$; $Z^*(\text{Al}) = 3.4$; $Z^*(\text{Si}) = 4.0$; $Z^*(\text{P}) = 4.6$; $Z^*(\text{S}) = 5.2$; $Z^*(\text{Cl}) = 5.8$.

б) $Q(\text{ат, Na}) = 107,16 \frac{\text{кДж}}{\text{моль}}$.

в) 242,3 кДж/моль.

г) $E_{\text{реш, NaCl}} = 785.71 \frac{\text{кДж}}{\text{моль}}$.

Задача 10-2

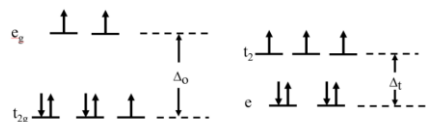
а) $3\text{Co} + 2\text{O}_2 \xrightarrow{<700^\circ\text{C}} \text{Co}_3\text{O}_4$ (Б)

$2\text{Co}_3\text{O}_4 \xrightarrow{>900^\circ\text{C}} 6\text{CoO} + \text{O}_2$ (В)

$\text{CoO} + \text{Al}_2\text{O}_3 \xrightarrow{t} \text{CoAl}_2\text{O}_4$ (А)

$\text{Co} + \text{Cl}_2 \xrightarrow{900^\circ\text{C}} \text{CoCl}_2$ (Г)

$[\text{Co}(\text{H}_2\text{O})_6]^{2+}$ - розовая окраска, $[\text{CoCl}_4]^{2-}$ - синяя окраска, спектр №1.



$[\text{Co}(\text{H}_2\text{O})_6]^{2+}$ $[\text{CoCl}_4]^{2-}$

б) $\text{Co}_3\text{O}_4 + 8\text{HCl} \rightarrow 3\text{CoCl}_2 + \text{Cl}_2 + 4\text{H}_2\text{O}$

$2\text{CoSO}_4 + \text{Br}_2 + 6\text{NaOH} \rightarrow 2\text{Co}(\text{OH})_3 + 2\text{NaBr} + 2\text{Na}_2\text{SO}_4$

в) 1,82 В

г) оранжевый - $[\text{Co}(\text{NH}_3)_6]\text{Cl}_3$

красный – $[\text{Co}(\text{NH}_3)_5\text{Cl}]\text{Cl}_2$

фиолетовый – $[\text{Co}(\text{NH}_3)_4\text{Cl}_2]\text{Cl}$

зеленый – $[\text{Co}(\text{NH}_3)_3\text{Cl}_3]$.

д) 0 В

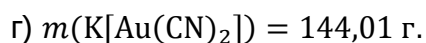
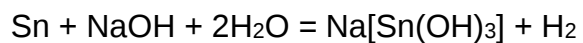
Задача 10-3

а) В – $\text{Cu}(\text{NO}_3)_2 \cdot 3\text{H}_2\text{O}$.

$m(\text{Cu}_{\text{сплав}}) = 63,55 \cdot (0,760/241,61) \approx 0.2 \text{ г}$ ($\omega(\text{Cu}) = 2 \%$)

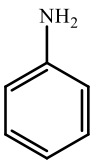
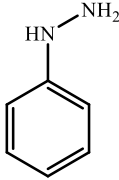
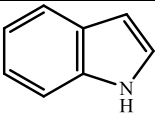
б) $m(\text{Sb}) = 0.5 \text{ г}$, $\omega(\text{Sb}) = 5\%$; вещество Г – стибин SbH_3 .

в) Олово

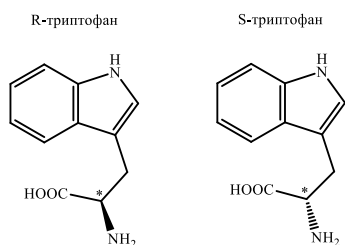


Задача 10-4

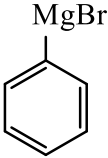
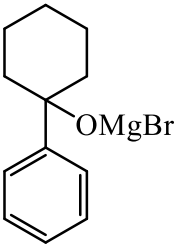
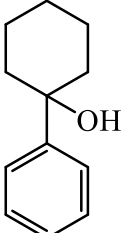
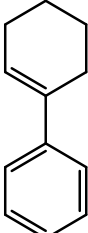
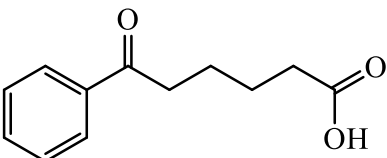
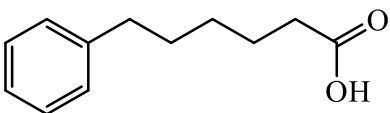
а)

A	 Анилин	B	 Фенилгидразин
C	 Индол		

б)



в)

D		E	
F		G	
H		I	

J		K	
L		M	
X			

Задача 10-5

а) $\text{CH}_2^{35}\text{Cl}_2 = 0.75 \cdot 0.75 = 0.5625$; $\text{CH}_2^{37}\text{Cl}_2 = 0.25 \cdot 0.25 = 0.0625$; $\text{CH}_2^{35}\text{Cl}^{37}\text{Cl} = 2 \cdot 0.75 \cdot 0.25 = 0.375$.

$\text{CH}_2^{35}\text{Cl} : \text{CH}_2^{35}\text{Cl}^{37}\text{Cl} : \text{CH}_2^{37}\text{Cl}_2 = 0.5625 : 0.375 : 0.0625 = 9 : 6 : 1$.

б) $\text{CH}_2^{79}\text{Br} : \text{CH}_2^{79}\text{Br}^{81}\text{Br} : \text{CH}_2^{81}\text{Br}_2 = 0.5^2 : 2 \cdot 0.5 \cdot 0.5 : 0.5^2 = 0.25 : 0.5 : 0.25 = 1 : 2 : 1$.

в) CH_2ClBr

$\text{CH}_2^{35}\text{Cl}^{79}\text{Br} : (\text{CH}_2^{35}\text{Cl}^{81}\text{Br} + \text{CH}_2^{37}\text{Cl}^{79}\text{Br}) : \text{CH}_2^{37}\text{Cl}^{81}\text{Br} = 0.75 \cdot 0.5 : (0.75 \cdot 0.5) + (0.25 \cdot 0.5) : 0.25 \cdot 0.5 = 0.375 : 0.5 : 0.125 = 3 : 4 : 1$.

г) **A** - 2,2-диметил-3-хлор-пропанол-1

