Subiectul C – 10 puncte

Oglinda de argint – 1e

| 1e. Oxidarea glucozei cu reactiv Tollens (fabricarea oglinzilor) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $C_6H_{12}O_6$ | + | $2[Ag(NH_3)_2]OH$ | → | $C_6H_{12}O_7$ | + | $4NH_3$ | + | $H_2O$ | + | $2Ag$ | | |
| glucoză | | reactivTollens | | acid gluconic | | amoniac | | apă | | argint | | |
| $2Ag^{+}$ | + | $2e^{-}$ | → | $2Ag^{0}$ | REDUCERE | | | | | | | |
| $C^{+1}$ | - | $2e^{-}$ | → | $C^{+3}$ | OXIDARE | | | | | | | |
| **REACŢIA OGLINZII DE ARGINT** | | | | | | | | | | | | |
| REACŢIA DE OXIDARE A ALDEHIDELOR LA ACIZI CARBOXILIXCI - REDOX | | | | | | | | | | | | |
| 4f.Oxidarea glucozei cu reactiv Fehling | | | | | | | | | | | | |
| $C_6H_{12}O_6$ | + | $2Cu(OH)_2$ | → | $C_6H_{12}O_7$ | + | $Cu_2O\downarrow$ | + | $2H_2O$ | | | | |
| glucoză | | reactiv Fehling | | acid gluconic | | oxid cupric – pp. roşu | | apă | | | | |
| $2Cu^{2+}$ | + | $2e^{-}$ | → | $2Cu^{+1}$ | REDUCERE | | | | | | | |
| $C^{+1}$ | - | $2e^{-}$ | → | $C^{+3}$ | OXIDARE | | | | | | | |
| REACŢIA DE OXIDARE A ALDEHIDELOR LA ACIZI CARBOXILICI - REDOX | | | | | | | | | | | | |

Precipitat roşu - 4f

| 3d.Oxidarea blândă a alcoolului etilic cu $K_2Cr_2O_7 + H_2SO_4$ | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $3CH_3\text{-}CH_2\text{-}OH$ | + | $K_2Cr_2O_7$ | + | $4H_2SO_4$ | → | $3CH_3\text{-}HC{=}O$ | + | $Cr_2(SO_4)_3$ | + | $K_2SO_4$ | + $7H_2O$ |
| alcool etilic sau etanol | | dicromat de potasiu | | acid sulfuric | | aldehidă acetică sau etanal | | sulfat de crom (III) | | sulfat de potasiu | apă |
| $2Cr^{6+}$ | | + | | $6e^-$ | | → | | $2Cr^{3+}$ | | REDUCERE | |
| $3C^{-1}$ | | - | | $6e^-$ | | → | | $3C^{+1}$ | | OXIDARE | |
| REACŢIA DE OXIDARE A ALCOOLILOR PRIMARI LA ALDEHIDE - REDOX | | | | | | | | | | | |

3d. Variaţia culorii de la potocaliu ($K_2Cr_2O_7$în mediu acid) la verde $Cr^{3+}$ din $Cr_2(SO_4)_3$ .

| 2a. Reacţia cu carbonaţii | | | | | | |
|---|---|---|---|---|---|---|
| $2CH_3\text{-}COOH$ | + | $Na_2CO_3$ | → | $2CH_3\text{-}COO^-Na^+$ | + | $H_2CO_3$ |
| acid acetic sau acid etanoic | | carbonat de sodiu | | acetat de sodiu | | acid carbonic |
| acid tare | | sare de acid slab | | sare de acid tare | | acid slab |
| ACIDITATEA – Acizii tari scot acizii slabi din sărurile lor. | | | | | | |

Efervescenţă -2a

| | | | | |
|---|---|---|---|---|
| $H_2CO_3$ | → | $CO_2\uparrow$ | + | $H_2O$ |
| acid carbonic | | **dioxid de carbon** | | apă |

| 5c.Identificarea amidonului | | | | |
|---|---|---|---|---|
| $-(C_6H_{10}O_5)_n-$ | + | iod | → | coloraţie albastră |
| amidon | | | | |
| REACŢIA DE IDENTIFICARE A AMIDONULUI | | | | |

Coloraţie albastră -5c

**Redactarea răspunsului:**

**Subiectul C** - 10 puncte

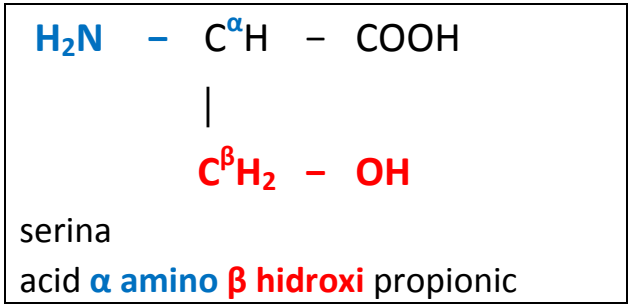
1. e
2. a
3. d
4. f
5. c

**Subiectul F5**

| CAZ GENERAL: Condensarea aminoacizilor | | | | | | |
|---|---|---|---|---|---|---|
| $H_2N\text{-}C^{\alpha}H(R_1)\text{-}COOH$ | + | $H_2N\text{-}C^{\alpha}H(R_2)\text{-}COOH$ | → | $H_2N\text{-}CH(R_1)\text{-}CO\text{-}NH\text{-}CH(R_2)\text{-}COOH$ | + | $H_2O$ |
| α aminoacid | | α aminoacid | | dipeptidă | | apă |
| REACŢIA DE CONDENSARE A AMINOACIZILOR | | | | | | |

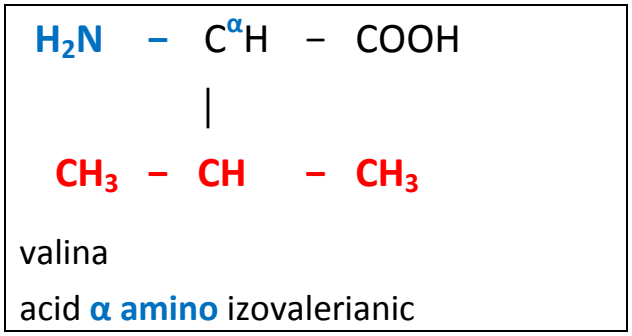
| 5a.Condensarea aminoacizilor | | | | | | |
|---|---|---|---|---|---|---|
| $H_2N\text{-}C^{\alpha}H(C^{\beta}H_2\text{-}OH)\text{-}COOH$ | + | $H_2N\text{-}C^{\alpha}H(CH_2\text{-}OH)\text{-}COOH$ | → | $H_2N\text{-}CH(CH_2\text{-}OH)\text{-}CO\text{-}NH\text{-}CH(CH_2\text{-}OH)\text{-}COOH$ | + | $H_2O$ |
| Serina (acid **α amino β hidroxi** propionic) | | Serina (acid **α amino β hidroxi** propionic) | | seril-serina (dipeptidă) | | apă |
| REACŢIA DE CONDENSARE A AMINOACIZILOR | | | | | | |

| 5b.Condensarea aminoacizilor | | | | | | |
|---|---|---|---|---|---|---|
| $H_2N\text{-}C^{\alpha}H[CH(CH_3)_2]\text{-}COOH$ | + | $H_2N\text{-}C^{\alpha}H(CH_2\text{-}SH)\text{-}COOH$ | → | $H_2N\text{-}CH[CH(CH_3)_2]\text{-}CO\text{-}NH\text{-}CH(CH_2\text{-}SH)\text{-}COOH$ | + | $H_2O$ |
| valina (acid **α amino** izovalerianic) | | cisteina (acid **α amino β tio** propionic) | | valil-cisteina (dipeptidă) | | apă |
| REACŢIA DE CONDENSARE A AMINOACIZILOR | | | | | | |



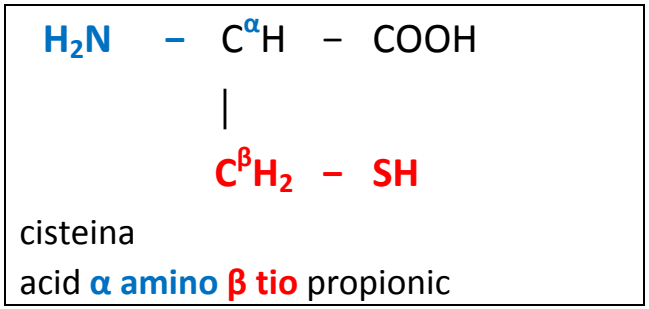

serina

acid **α amino β hidroxi** propionic



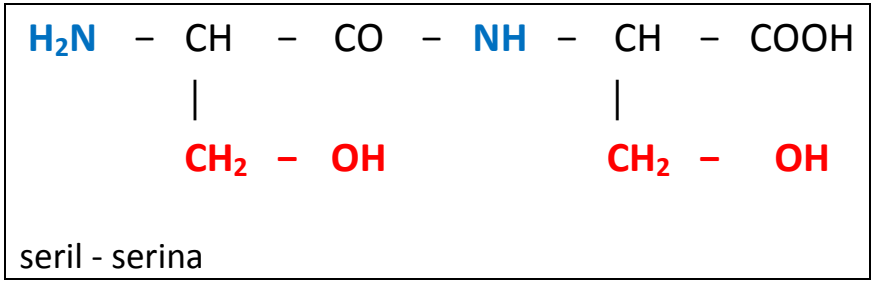

valina

acid **α amino** izovalerianic

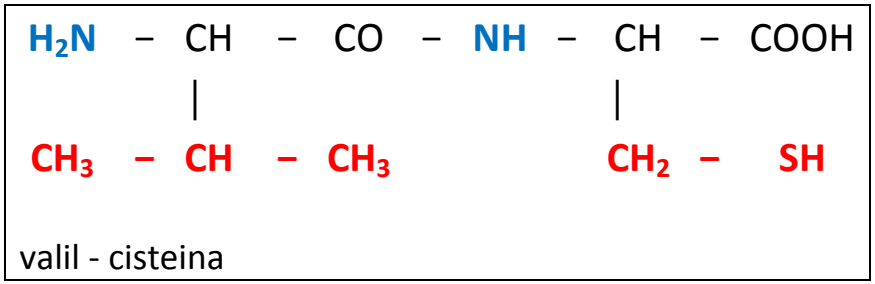



cisteina

acid **α amino β tio** propionic




seril - serina




valil - cisteina