**YOD OLISH UCHUN SIFAT REAKSIYALAR**

“HALOL VA HAROM ILMIDAN KEYINGI

ENG SHARAFLI ILM BU – TIB ILMIDIR !!!”

***IMOM SHOFE`IY***

|  |  |  |  |
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| **№** | **ION****(**MODDA**)** | **REAGENT****(**REAKSIYA SHAROITI**)** | **REAKSIYA BELGILARI VA TENGLAMALARI** |
| **NOORGANIKA** |
| **1** | $$H^{+}$$ | **LAKMUS**(C9H10NO5) | QIZIL |
| **METIL ZARG`ALDOG`I**(C14H14N3O3SNa) | PUSHTI |
| **2** | $$NH\_{4}^{+}$$ | $OH^{-}$ **; tO C**ISHQORLAR BILAN QIZDIRISH | O`TKIR HIDLI GAZ(**NH3**) AJRALADI |
| **NESSLER REAKTIVI**(K2[HgI4] + KOH) | QIZG`ISH-QO`NG`IR CHO`KMA |
| **3** | $$Ag^{+}$$ | $$F^{-}$$ | **!!! CHO`KMA EMAS !!!** |
| $$Cl^{-}$$ | OQ-PAG`A(**AgCl**) CHO`KMA |
| $$Br^{-}$$ | OCH-SARIQ(**AgBr**) CHO`KMA |
| $$I^{-}$$ | SARIQ(**AgI**) CHO`KMA |
| $$OH^{-}$$ | QO`NG`IR(**Ag2O**) CHO`KMA |
| $$PO\_{4}^{3-}$$ | YORQIN SARIQ(**Ag3PO4**) CHO`KMA |
| $$CO\_{3}^{2-}$$ | OQ (**Ag2CO3**) CHO`KMA |
| **4** | $$Na^{+}$$ | ALANGA | SARIQ |
| **5** | $$K^{+}$$ | ALANGA | OCH-BINAFSHA |
| **6** | $$Li^{+}$$ | ALANGA | OCH-QIZIL |
| **7** | $$Ca^{2+}$$ | $$CO\_{3}^{2-}$$ | OQ(**CaCO3**) CHO`KMA |
| C2$O\_{4}^{2-}$ | OQ(**CaC2O4**) CHO`KMA |
| ALANGA | G`ISHTSIMON QIZG`ISH |
| **8** | $$Ba^{2+}$$ | $$SO\_{4}^{2-}$$ | OQ(**BaSO4**) CHO`KMA |
| $$CO\_{3}^{2-}$$ | OQ(**BaCO3**) CHO`KMA |
| $$PO\_{4}^{3-}$$ | OQ(**Ba3(PO4**)2) CHO`KMA |
| $$CrO\_{4}^{2-}$$ | SARIQ(**BaCrO4**) CHO`KMA |
| ALANGA | SARIQ-YASHIL |
| **9** | $$Cu^{2+}$$(havorang yoki yashil) | $$OH^{-}$$ | HAVORANG/KO`K(**Cu(OH)2**) CHO`KMA(Qizdirilganda qora-CuO) |
| KI | OQ(**CuI2**) CHO`KMA |
| **10** | $$Fe^{2+}$$(och yashil) | $$OH^{-}$$ | OCH YASHIL(**Fe(OH)2**) CHO`KMA |
| Me2CO3 | OQ (**FeCO3**) CHO`KMA |
| K3[Fe(CN)6](qizil qon tuzi) | KO`K(**Fe3[Fe(CN)6]2**)CHO`KMA(Trunbul ko`ki) |
| **11** | $$Fe^{3+}$$(sariq-jigarrang)(zang rang) | $$OH^{-}$$ | QO`NG`IR(**Fe(OH)3**) CHO`KMA |
| NH4SCN | YORQIN QIZIL(**Fe(SCN)3**) ERITMA |
| Na3PO4 | OCH SARIQ(**FePO4**) CHO`KMA |
| K4[Fe(CN)6](qizil qon tuzi) | TO`Q KO`K(**Fe4[Fe(CN)6]3**)CHO`KMA(Berlin lazuri yoki ko`ki) |
| **12** | $$Ni^{2+}$$(Och yashil) | $$OH^{-}$$ | YASHIL(**Ni(OH)2**) CHO`KMA |
| **13** | $$Co^{2+}$$Pushti | $$OH^{-}$$ | PUSHTI(**Co(OH)2**) CHO`KMA |
| **14** | $$Al^{3+}$$$$Al^{3+}$$ | $$OH^{-}$$ | YOPISHQOQ OQ(**Al(OH)3**) CHO`KMA(mol ishqorda eriydi) |
| ALIZARIN(C12H6O2OH) | YORQIN QIZIL CHO`KMA(aluminiy alizarinat) |
| Na2HPO4 | OQ(**AlPO4**) CHO`KMA |
| **15** | $$Cr^{3+}$$(Sariq-jigarrang) | $$OH^{-}$$ | BINAFSHA/YASHIL(**Cr(OH)3**)CHO`KMA(mol ishqorda eriydi) |
| **16** | $$Mn^{2+}$$Och yashil | $$OH^{-}$$ | OQ(**Mn(OH)2**) CHO`KMA |
| **17** | $$Mg^{2+}$$Och yashil | $$OH^{-}$$ | OQ AMORF(**Mg(OH)2**) CHO`KMA |
| $$CO\_{3}^{2-}$$ | OQ AMORF(**MgCO3**) CHO`KMA |
| **18** | $$Zn^{2+}$$ | $$OH^{-}$$ | YOPISHQOQ OQ(**Zn(OH)2**) CHO`KMA(mol ishqorda eriydi) |
| $$S^{2-}$$ | OQ(**ZnS**) CHO`KMA |
| **19** | $$OH^{-}$$ | **LAKMUS**(C9H10NO5) | KO`K |
| **FENOLFTALEIN**(C20H14NO4) | ⏺ **KUCHLI** ISHQORIY – MALINA/TO`Q QIZIL⏺ **O`RTA** KUCHLI – QIZIL⏺ **KUCHSIZ** ISHQORIY - PUSHTI |
| **METIL ZARG`ALDOG`I**(C14H14N3O3SNa) | SARIQ |
| **20** | $$Cl^{-}$$ | $$Ag^{+}$$ | OQ-PAG`A(**AgCl**) CHO`KMA |
| $$Pb^{2+}$$ | OQ-KRISTALL(**PbCl2**) CHO`KMA |
| **21** | $$Br^{-}$$ | $$Ag^{+}$$ | OCH-SARIQ(**AgBr**) CHO`KMA |
| $$Pb^{2+}$$ | OQ(**PbBr2**) CHO`KMA |
| **22** | $$I^{-}$$ | $$Ag^{+}$$ | SARIQ(**AgI**) CHO`KMA |
| $$Pb^{2+}$$ | SARIQ(**PbI2**) CHO`KMA |
| $$Cu^{2+}$$ | SARIG`ISH-OQ(**CuI**) CHO`KMA( 4$I^{-}$ + 2$Cu^{2+}$ = 2CuI ↓ + I2) |
| **23** | $$SO\_{4}^{2-}$$ | $$Ba^{2+}$$ | OQ(**BaSO4**) CHO`KMA |
| $$Pb^{2+}$$ | OQ(**PbSO4**) CHO`KMA |
| **24** | $$NO\_{3}^{-}$$ | Cu (Kons eritmada) | QO`NG`IR (**NO2**) GAZ |
| **25** | $$PO\_{4}^{3-}$$ | $$Ba^{2+}$$ | OQ(**Ba3(PO4**)2 CHO`KMA |
| $$Ag^{+}$$ | YORQIN SARIQ(**Ag3PO4**) CHO`KMA |
| **26** | $$CrO\_{4}^{2-}$$sariq | $$Ba^{2+}$$ | SARIQ(**BaCrO4**) CHO`KMA |
| **27** | Cr2$O\_{7}^{2-}$To`q sariq/Qovoqrang | H2O2 | KO`K ERITMA |
| **28** | $$MnO\_{4}^{-}$$Pushti-siyohrang eritma  | $$H^{+}$$(Kislotali muhit) | ERITMA RANGSIZLANADI :$MnO\_{4}^{-}$ → $Mn^{2+}$ |
| $$OH^{-}$$(Ishqoriy muhit) | YASHIL RANGLI ERITMA :$MnO\_{4}^{-}$ → $MnO\_{4}^{2-}$ |
| $OH^{-}$ = $H^{+}$(Neytral muhit) | QORA CHO`KMA :$MnO\_{4}^{-}$ → MnO2 |
| **29** | $$S^{2-}$$ | $$Ag^{+}$$ | QORA (**Ag2S**) CHO`KMA |
| $$Cu^{2+}$$ | QORA (**CuS**) CHO`KMA |
| $$H^{+}$$ | PALAG`DA TUXUM HIDLI( **H2S**) GAZ |
| **30** | $$CO\_{3}^{2-}$$ | $$H^{+}$$ | OHAKLI SUVLI LOYQALANTIRUVCHI (**CO2**) GAZ |
| $$Ag^{+}$$ | OQ (**Ag2CO3**) CHO`KMA |
| $$Ba^{2+}$$ | OQ (**Ag2CO3**) CHO`KMA |
| **31** | $$NO\_{2}^{-}$$ | $$H^{+}$$ | QO`NG`IR (**NO2**) GAZ2HNO2 = NO2 ↑+ NO + H2O |
| **32** | $$SiO\_{3}^{2-}$$ | $$H^{+}$$ | OQ YOPISHQOQ/GELSIMON(**H2SiO3**) CHO`MKA |
| $$Ag^{+}$$ | SARIQ(**Ag2SiO3**) CHO`KMA |
| **33** | CH3CO$OH^{-}$ | H2SO4 ; to | O`ZIGA HOS HID AJRALADI(Uksus hidi keladi) |
| **ORGANIKA** |
| **34** | ALKAN | ALANGA | KO`KISH ALANGA BERIB YONADI |
| **35** | SIKLOALKAN | Br2 | C3 – C4 halqalilar biriktiradiC5 $\leq $ Cn halqalilar biriktirmaydi, almashinadi |
| **36** | ALKEN | Br2(AQ)Qizg`ish-qo`ng`ir suvli eritma | RANGSIZLANTIRADI |
| $KMnO\_{4}^{.}$ ; kislotaliPushti-siyohrang eritma | RANGSIZLANTIRADI |
| $KMnO\_{4}^{.}$ ; suvliPushti-siyohrang eritma | QORA-QO`NG`IR(**MnO2**) CHO`KMA |
| ALANGA | SARG`ISH ALANGA BERIB YONADI |
| **37** | ALKADIYEN | Br2(AQ)Qizg`ish-qo`ng`ir suvli eritma | RANGSIZLANTIRADI |
| $KMnO\_{4}^{.}$ ; kislotaliPushti-siyohrang eritma | RANGSIZLANTIRADI |
| $KMnO\_{4}^{.}$ ; suvliPushti-siyohrang eritma | QORA-QO`NG`IR(**MnO2**) CHO`KMA |
| **38** | TABIIY KAUCHUK(Poliizopren) | OZON | LEVULIN ALDEGID HOSIL BO`LADI |
| **39** | QO`SH BOG` | OZON | TRIOZONID HOSIL BO`LADI |
| **40** | ALKIN(Atsetilen) | ALANGA | TUTAB YONADI |
| **41** | AREN(Benzol) | ALANGA | TUTAB YONADI |
| **43** | FENOL | FeCl3 | BINAFSHA RANGLI ERITMA |
| Br2(AQ)Qizg`ish-qo`ng`ir suvli eritma | ⏺ RANGSIZLANTIRADI⏺ OQ (C6H2OHBr3) CHO`KMA2,4,6 – tribromo fenol |
| Na2CO3 | RANGSIZ GAZ (**CO2**) AJRALADI |
| **44** | SPIRTCnH2n+1OH | Na | **H2** AJRALADI |
| Cu ; toC | MEVA HIDLI BUG` (**CH3CHO**) |
| ALANGA | YORQIN-HAVORANG ALANGA BERIB YONADI |
| **45** | KO`P ATOMLI SPIRT⏺ Etilen glikol ⏺ glitserin | **FELING SUYUQLIGI**Yangi tayyorlangan Cu(OH)2 | KO`K RANGLI ERITMA⏺ Mis glikolyat⏺ Misglitserat |
| **46** | GLITSERIN | KHSO4Kaliy bisulfat | O`TKIR HIDLI(**CH2=CH-CHO**) AJRALADIakrolein/propenal |
| **47** | ALDEGID(R-CHO) | **FELING SUYUQLIGI**Yangi tayyorlangan Cu(OH)2 | QIZIL(**Cu2O**) CHO`KMA(mis ko`zgu yoki!!! Svetafor(ko`k-sariq-qizil) reaksiya) |
| **TOLLENS REAKTIVI**[Ag(NH3)2]OHKumush oksidining ammiakdagi eritmasi | KUMUSH KO`ZGU REAKSIYASIKumush idish devorlariga qoplanadi |
| NaHSO3Natriy bisulfit | KRISTALL CHO`KMA |
| **48** | HCOOHHCOOH | **LAKMUS**(C9H10NO5) | QIZIL |
| $KMnO\_{4}^{.}$ ; kislotaliPushti-siyohrang eritma | RANGSIZLANTIRADI |
| Na2CO3eritma | RANGSIZ GAZ (**CO2**) AJRALADI |
| **TOLLENS REAKTIVI**[Ag(NH3)2]OHKumush oksidining ammiakdagi eritmasi | KUMUSH KO`ZGU REAKSIYASIKumush idish devorlariga qoplanadi |
| H2SO4  ishtirokida qizdirish | RANGSIZ GAZ (**CO**) AJRALADI |
| **49** | TO`YINMAGAN KISLOTALAROLEINLINOLLINOLEINPALMITOLEIN | ⏺ $KMnO\_{4}^{.}$ ; kislotaliPushti-siyohrang eritmaBr2(AQ)⏺ Qizg`ish-qo`ng`ir suvli eritma | RANGSIZLANTIRADI |
| **50** | SOVUNLARC17H35COONa | $$H^{+}$$ | OQ CHO`KMASTEARIN KISLOTA QOTIB QOLADI |
| **51** | UGLEVODLAR⏺ Glukoza⏺ Maltoza⏺ Laktoza⏺ Sellibioza | **FELING SUYUQLIGI**Yangi tayyorlangan Cu(OH)2 | ⏺ ODDIY SHAROITDA KO`K⏺ QIZDIRILGANDA QIZIL(**Cu2O**) CHO`KMA |
| **52** | GLUKOZA | **TOLLENS REAKTIVI**[Ag(NH3)2]OHKumush oksidining ammiakdagi eritmasi | KUMUSH KO`ZGU REAKSIYASIKumush idish devorlariga qoplanadi |
| **53** | KRAXMAL(C6H11O5)N | YOD ERITMASI | KO`K RANGGA BO`YALADI |
| **54** | AMINOBIRIKMALAR | **LAKMUS**(C9H10NO5) | KO`K |
| **55** | BIRLAMCHI AMIN | HNO2 | RANGSIZ GAZ(**N2**) AJRALADI |
| **56** | ANILIN | Br2(AQ)Qizg`ish-qo`ng`ir suvli eritma | ⏺ RANGSIZLANTIRADI⏺ OQ (C6H2NH2Br3) CHO`KMA(2,4,6 – tribromo anilin) |
| **57** | OQSILLAR | **BIURET REAKSIYASI**Cu(OH)2 ; ishqoriy muhit | Oqsil ishqoriy muhitda mis (II) sulfatningeritmasi bilan binafsha rangga bo`yaladi. Biuret reaksiyasi [—CO—NH—]bog`lar ya`ni, peptid bog`lar uchun xos reaksiyadir. Masalan, dipeptid — KO`K, tripeptid BINAFSHA, yuqori peptidlar esa QIZIL rang beradi. |
| **KSANTOPROTEIN REAKSIYASI** | Oqsil kons. HNO3 kislota ta`sirida sariqrangga bo`yaladi, kons. (25%) NH4OH ta`sirida esa sariq rang TO`QSARIQ rangga o`tadi. |
| **MILON REAKSIYASI** | Oqsilni simob nitrat tuzining nitrat vanitrit kislotalardagi eritmasi bilan qizdirilganda oqsil QIZIL-QO`NG`IRcho`kma beradi, bu reaksiya tirozin va triptofanlar uchun xos. |
| **NINGIDRIN REAKSIYASI** | Oqsil ningidrin eritmasi bilan qo`shibqizdirilsa, KO`K bo`yalish beradi. |

**25-26-YANVAR** KUNI SERTIFIKAT IMTIXONIGA KIRUVCHI

BARCHA O`QUVCHILARMIZGA **OMAD TILAYMIZ** !!!

BARCHANGIZ +**A2** OLIB CHIQING 😊😊😊

BIZ USTOZLAR SIZLARGA ISHONAMIZ, ALBATTA, UDDALAYSIZLAR !!!

MILODIY

23.01.2025

PAYSHANBA