Q1: 16 March (Shift 1) - Numerical

Complete combustion of 750 g of an organic compound provides 420 g of CO_2 and 210 g of H_2O. The percentage composition of carbon and hydrogen in organic compound is 15.3 and....respectively. (Round off to the Nearest Integer)

Q2: 16 March (Shift 1) - Numerical

A 6.50 molal solution of KOH (aq.) has a density of 1.89 g cm^{-3}. The molarity of the solution is_____ $moldm^{-3}$. (Round off to the Nearest Integer).

[Atomic masses: K : 39.0u; O : 16.0u; H : 1.0u]

Q3: 17 March (Shift 1) - Numerical

In the above reaction, 3.9 g of benzene on nitration gives 4.92 g of nitrobenzene. The percentage yield of nitrobenzene in the above reaction is ____ %. (Round off to the Nearest Integer).

Given atomic mass :

C : 12.0u, H : 1.0uO : 16.0u, N : 14.0u

Q4: 17 March (Shift 1) - Numerical

The mole fraction of a solute in a 100 molal aqueous solution ____ $\times 10^{-2}$ (Round off to the Nearest Integer).

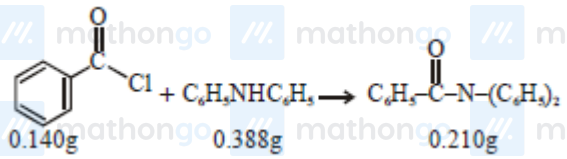
Q5: 17 March (Shift 2) - Numerical

KBr is doped with 10^{-5} mole percent of $SrBr_2$. The number of cationic vacancies in 1 g of KBr crystal is ____

10^{14}. (Round off to the Nearest Integer). [Atomic Mass : K : 39.1u, Br : 79.9u

$N_A = 6.023 \times 10^{23}$]

Q6: 17 March (Shift 2) - Numerical



Consider the above reaction. The percentage yield of amide product is ____ (Round off to the Nearest Integer).
(Given : Atomic mass: C : 12.0u, H : 1.0u

N : 14.0u, O : 16.0u, Cl : 35.5u)

Q7: 18 March (Shift 1) - Numerical

____ grams of 3-Hydroxy propanal (MW = 74) must be dehydrated to produce 7.8 g of acrolein

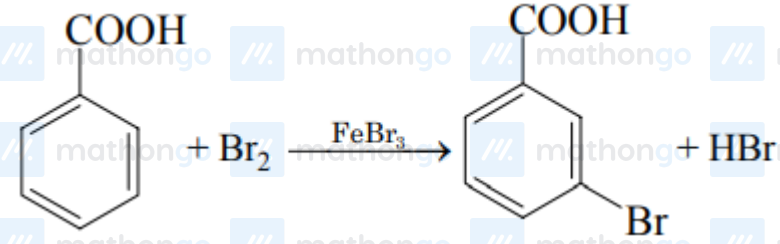
(MW = 56) (C_3H_4O) if the percentage yield is 64. (Round off to the Nearest Integer).
[Given : Atomic masses: C: 12.0 u, H : 1.0u, O : 16.0u]

Q8: 18 March (Shift 1) - Numerical

Complete combustion of 3 g of ethane gives $x \times 10^{22}$ molecules of water. The value of x is____(Round off to the Nearest Integer).

[Use : $N_A = 6.023 \times 10^{23}$; Atomic masses in u : C : 12.0; O : 16.0; H : 1.0]

Q9: 18 March (Shift 2) - Numerical



Consider the above reaction where 6.1 g of benzoic acid is used to get 7.8 g of m -bromo benzoic acid. The percentage yield of the product is_____

(Round off to the Nearest integer)

[Given : Atomic masses : $C = 12.0u, H : 1.0u,$

$O : 16.0u, Br = 80.0u$]

Answer Key

Q1 (3) **Q2** (9) **Q3** (80) **Q4** (64)

Q5 (5) **Q6** (77) **Q7** (16) **Q8** (18)

Q9 (78)