141.(B) There is an error of 3 dps

$$C_0 = 20 \text{ dps}$$
$$C_{10} = 10 \text{ dps}$$

So, half-life (y) = 10 min. and $C_{20} = 5 \text{ dps}$

142.(B)

pH	$[H^+]$
2	10^{-2} M
1	10^{-1} M

$$\left(\frac{dx}{dt}\right) = k(10^{-2})^n$$

$$100\left(\frac{dx}{dt}\right) = k(10^{-1})^n$$

$\therefore$ $100 = (10)^n$

$$(10)^2 = (10)^n$$

$\therefore$ n = 2

143.(D) $C \xleftarrow{k_2} A \xrightarrow{k_1} B$ % of B $= \left(\dfrac{k_1}{k_1 + k_2}\right) \times 100$

144.(D) I : $\left(\dfrac{dx}{dt}\right) = k$ for zeroth order reaction, i.e., C

II : Half-life is independent of concentration for the first order reaction, i.e., A

III : graph between $(a - x)^{-1}$ and time is linear for second order reaction hence B

145.(C) The energy profile of a reaction must have energy barrier for either F.R. or B.R. or both, along with a proper potential energy level for the species.

146.(B) $\log k = \log A - \dfrac{E}{2.303 RT}$

$$\log k - \log A = -\dfrac{E_a}{2.303 RT}$$

$$\log\left(\frac{k}{A}\right) = -\frac{2.303 RT}{2.303 RT} = -1$$

$$\frac{k}{A} = \text{antilog} (-1.0) = 1 \times 10^{-1} = 0.1$$