6) Set-1: Pos-9: A S T T A S T T G T T

$f(A) = 2/11 = 0.182$; $f(S) = 2/11 = 0.182$

$f(T) = 6/11 = 0.545$; $f(G) = 1/11 = 0.091$

$\Rightarrow c^e(9) = -1.1691$

$\therefore c^e(9) = 0.182 \times \ln(0.182) + 0.182 \times \ln(0.182) + 0.545 \times \ln(0.545) + 0.091 \times \ln(0.091)$

Pos-11: V V I I V I V V V V V

$f(V) = \frac{8}{11} = 0.727$ $\quad f(I) = 3/11 = 0.273$

$\Rightarrow c^e(11) = -0.5862$

$\therefore c^e = 0.727 \times \ln(0.727) + 0.273 \times \ln(0.273)$

Pos-20: K S G G G G G G G G A A

$f(A) = 2/11 = 0.182$; $f(G) = 7/11 = 0.636$

$f(K) = 0.091 = 1/11$; $f(S) = 1/11 = 0.091$

$\Rightarrow c^e(20) = -1.0341$

$\therefore c^e = 0.182 \times \ln(0.182) + 0.636 \times \ln(0.636) + 0.091 \times \ln(0.091) + 0.091 \times \ln(0.091)$

Pos-22: A A A G A G A A A A A

$f(A) = 9/11 = 0.818$ $\quad f(G) = 2/11 = 0.182$

$\Rightarrow c^e(22) = -0.4749$

$\therefore c^e = 0.818 \times \ln(0.818) + 0.182 \times \ln(0.182)$

Pos-30: L L L L L L L L L L L

$f(L) = 11/11 = 1$

$\Rightarrow c^e(30) = 0$

$\therefore c^e = 1 \times \ln(1)$

Set-2: Pos-9: ------G--

$f(G) = 1/9 = 0.111$ $\Rightarrow c^e(9) = -0.24421$

$\therefore c^e = 0.111 \times \ln(0.111)$

Pos-11: ------G--

$f(G) = 1/9 = 0.111$ $\Rightarrow c^e(11) = -0.24421$

$\therefore c^e = 0.111 \times \ln(0.111)$

Pos-20: ------KEE

$f(K) = 1/9 = 0.111$; $f(E) = 2/9 = 0.222$ $\Rightarrow c^e(20) = -0.5784$

$\therefore c^e = 0.111 \times \ln(0.111) + 0.222 \times \ln(0.222)$

Pos-22: ------EEE

$f(E) = 3/9 = 0.333$ $\Rightarrow c^e(22) = -0.3662$

$\therefore c^e = 0.333 \times \ln(0.333)$

Pos-30: ------III

$f(I) = 3/9 = 0.333$ $\Rightarrow c^e(30) = -0.3662$

$\therefore c^e = 0.333 \times \ln(0.333)$