Question No. 1

**Answer**

i)

Maximum participant:

$5 \times 5 \times 10 \times 10 \times 10 \times 10 = 250000$

ii)

Start with B

$1 \times 5 \times 10 \times 10 \times 10 \times 10 = 50000$

End with 3

$5 \times 5 \times 10 \times 10 \times 10 \times 1 = 25000$

$B \cap 3 = 1 \times 5 \times 10 \times 10 \times 10 \times 1 = 5000$

$A \cup B = 50000 + 25000 - 5000 = 70000$

**Answer**

i)

$$\left\lceil \frac{25}{5} \right\rceil = 5$$

ii)

$k = 5, m = 3$

$$\left[(3-1)\times 5\right]+1 = 11$$

iii)

$n = 100$

state $= 5$

fairly distributed $= \frac{100}{5} = 20$

Hence to have at least 5 Johorean $= 20(4)+5 = 85$

**Question No.** Q3

**Answer**

i)

$n = 10, r = 5$

$$6^{th}\ term = \binom{10}{5}\left(\frac{1}{4}x^2y\right)^5\left(\frac{x}{y}\right)^5 = \frac{63}{256}x^{15}$$

$= 0.2461$

ii)

$n = 10, r = 4$

$$\binom{10}{4}\left(\frac{1}{4}x^2y\right)^6\left(\frac{x}{y}\right)^4$$

$$\text{coefficient} = \binom{10}{4}\left(\frac{1}{4}\right)^6 = \frac{105}{2048}$$

$= 0.0513$

| Question No. | Q4 |
|---|---|

**Answer**

i)

$$(w \cap wk) = \frac{35}{100} \times \frac{20}{35} = \frac{1}{5}$$

0.2

ii)

$$P(wk) = P(w \cap wk) + P(w' \cap wk)$$

$$= \left(\frac{35}{100} \times \frac{20}{35}\right) + \left(\frac{65}{100} \times \frac{30}{65}\right) = \frac{1}{2}$$

0.5

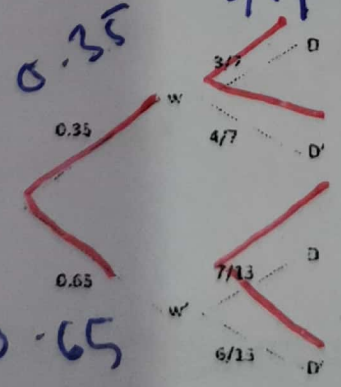
iii)

$$P(wk \mid w) = \frac{P(w)\,P(wk \mid w)}{P(wk)}$$

$$= \frac{1/5}{1/2} = \frac{2}{5}$$

0.4

(b)




3/7 0.4286

4/7 0.5714

7/13 0.5385

6/13 0.4615