

2]

There are two general ways that Alice can have classes every day

either 2 days with 2 classes or 3 days with 1 class or

1 day with 3 classes or 1 class on each day

So the probability for 2 days when she has 2 classes & then select 2 classes on those days & 1 class for the other days

$$= {}^5C_2 ({}^6C_2)^2 6^3 \text{ \& } {}^5C_1 6 {}^6C_3 6^4$$

\therefore Probability is

$$\frac{({}^5C_2 \times ({}^6C_2)^2 \times 6^3) + ({}^5C_1 \times 6 \times {}^6C_3 \times 6^4)}{{}^{10}C_7}$$

$$= 33.0\%$$

Assignment 8

Answer:-

To find out the required probability first of all

we will find out the probability of one or more season no student having their birthday

And we will minus/ subtract the calculated value from 1 to get the required probability

\therefore Each person has birthday on one season out of 4

\therefore Total possibilities = 4^7

To find the probability of (not) having birthday we will be using inclusion & Exclusion

$$\therefore 4C_1 \times 3^7 - 4C_2 \times 2^7 + 4C_3 \times 1^7 / 4^7$$

$$= 4 \times 3^7 - 6 \times 2^7 + 4 \times 1 / 4^7$$

$$= 0.4873$$

$$\begin{aligned} \therefore \text{Required Probability} &= 1 - 0.4873 \\ &= 0.51269 \end{aligned}$$