

St. Mira's College for Girls, Pune
(Autonomous-Affiliated to Savitribai Phule Pune University)
Class: FYBSC Computer Science
Subject: Discrete Mathematics
Subject Code: BS11503
Semester: I
Year: 2019-20

1. Unit No.: 1
2. Employability/Entrepreneurship/Skill development
Skill Development : Problem Solving, computing skills
3. Test on Counting Principles

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04/10/19

St. Mira's College For Girls, Pune - 1.
Maths Flexi

Q1] How many license plate can be made using 3 letter followed by 4 digits if repetition is not allowed. (3 marks)

Q2] How many ways are there to select 2 cards from a pack of 52 cards which are both either cards or both cards bear a no multiple of 4. (3 marks)

Q3] Find no. negative integer solution of the following equation

(i) $x_1 + x_2 + x_3 + x_4 + x_5 = 25$. (2 marks)

(ii) $x_1 + x_2 + x_3 + x_4 = 17$ (2 marks)

Answers:-

Q1] → By using non negative integer, we know that ${}^n C_r = {}^n C_{n-r}$

(i) $x_1 + x_2 + x_3 + x_4 + x_5 = 25$
 $n = 25$ $n = 5$
 $r = 5$ $r = 25$

${}^n C_r = {}^n C_{n-r}$ $n+r-1 C_r = {}^{n+r-1} C_{n-r}$

${}^{25} C_5 = {}^{25} C_{20}$ ${}^{5+25-1} C_5 = {}^{29} C_{25}$

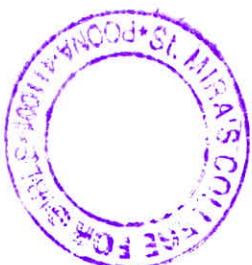
$\frac{25!}{5!(20)!}$ $\frac{29!}{25!(29-25)!}$

$\frac{25 \times 24 \times 23 \times 22 \times 21}{5 \times 4 \times 3 \times 2 \times 1}$ $\frac{29 \times 28 \times 27 \times 26}{4 \times 3 \times 2}$

$\frac{25 \times 24 \times 23 \times 22 \times 21}{20 \times 2}$ $\frac{25 \times 24 \times 23 \times 22 \times 21}{4 \times 3 \times 2}$

$= 53130$ $= 29 \times 28 \times 27 \times 26$

$= 53130$



Principal Incharge
 St. Mira's College for Girls

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 Subject Teacher