SECI1013: DISCRETE STRUCTURE
SEM 1 2023/2024

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Marks 15/15

Question 1 **[4 Marks]**

A parent-teacher committee consisting of 4 people is to be formed from 20 parents and 5 teachers. Find the probability that the committee will consist of these people :

a) All parents
b) 1 teacher and 3 parents

1.(a) $\frac{C(20,4)}{C(25,4)} = \frac{4845}{12650} = 0.3830$

(b) $\frac{C(20,3) \cdot C(5,1)}{C(25,4)} = \frac{5700}{12650} = 0.4506$

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Question 2 **[3 Marks]**

The probability that Alif lives in campus is 0.37. If the probability that he will buy a new notebook, given that he lives in campus is 0.75, find the probability that he will live on campus and buy a new notebook.

$P(N|C) = 0.75$
$P(C) = 0.37$
$P(N|C) = \frac{P(N \cap C)}{P(C)}$

N denotes he will buy a new notebook
C denotes he lives in campus

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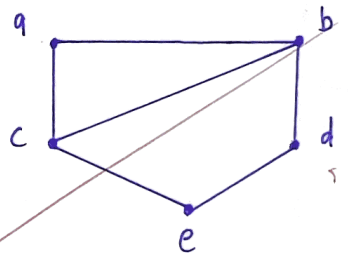
Question 3 **[5 Marks]**

$P(N \cap C) = 0.75 \times 0.37 = 0.2775$

Draw the graph based on the following adjacency matrix:

	a	b	c	d	e
a	0	1	1	0	0
b	1	0	1	1	0
c	1	1	0	0	1
d	0	1	0	0	1
e	0	0	1	1	0



5

Question 4 **[3 Marks]**

Based on your answer in Question 3 above, find the degree of each vertex a, b and c.

deg(a) = 2
deg(b) = 3
deg(c) = 3

3