		COURSE CODE / COURSE NAME	DBM2033 DISCRETE MATHEMATICS
	POLITEKNIK MALAYSIA KUCHING SARAWAK	COURSEWORK ASSESSMENT	QUIZ 4
KEMENTERIAN PENDIDIKAN TINGGI		SESSION	JUNE 2018

JABATAN MATEMATIK, SAINS & KOMPUTER

NAME	Bryner Lee Young	DURATION	15 MIN	CLO 3	
REGISTRATION NO.	05DDT17F2013				
PROGRAMME/SECTION	DDT2B / S2		TOTAL MARKS		

INSTRUCTION:

Answer ALL questions.

Question 1 (CLO1, C2)

How many 3-digits numbers can be formed with the digits 0 to 7 if the digits are not repeated.

$7 \times 6 \times 5 \times 4 \times 3 \times 2$
$= 5040$ ways

$7!$
$= 5040$ ways

$7 \times 6 \times 5$
$= 210$ ways

$7P_3 = 210$ ways

[4 marks]

Question 3 (CLO1, C2)

A committee of 7 persons is to be formed from 10 men and 6 women. In how many ways can this be done when

(a) At least 3 women are included

$= 4200$ ways   6280 ways

[3 marks]

(b) At most 4 women are included

$= 11040$ ways

[3 marks]

~ END OF QUESTIONS ~

(a)

W	M		Total
3	4	$^6C_3 \times {}^{10}C_4$	4200
4	3	$^6C_4 \times {}^{10}C_3$	1800
5	2	$^6C_5 \times {}^{10}C_2$	270
6	1	$^6C_6 \times {}^{10}C_1$	10
7	0	.	6280

(a)

W	M		
3	4	$^6C_3 \times {}^{10}C_4$	4200

(b)

W	M		Total
1	6	$^6C_1 \times {}^{10}C_6$	1260
3	4	$^6C_3 \times {}^{10}C_4$	4200
2	5	$^6C_2 \times {}^{10}C_5$	3780
4	3	$^6C_4 \times {}^{10}C_3$	1800

11040

Question 1

- 3 digits number
- 0 - 7 //(8)
- not repeated

1st digit = $^8C_1$

2nd digit = $^7C_1$

3rd digit = $^6C_1$

$$\frac{^8C_1 \times ^7C_1 \times ^6C_1}{}$$

$8 \times 7 \times 6 = 336 \text{ ways}$

Question 2

- 7 person to be formed
- 10 men and 6 women

a) at least 3 womens included

women	men
① 3	4
② 4	3
③ 5	2
④ 6	1

① $^6C_3 + ^{10}C_4 = 20 + 210 = 220 \text{ ways}$

② $^6C_4 + ^{10}C_3 = 15 + 120 = 135 \text{ ways}$

③ $^6C_5 + ^{10}C_2 = 6 + 45 = 51 \text{ ways}$

④ $^6C_6 + ^{10}C_1 = 1 + 10 = 11 \text{ ways}$

Total ways = 417 ways

b) at least 4 womens included

women	men
① 4	3
② 5	2
③ 6	1

① $^6C_4 + ^{10}C_3 = 20 + 210 = 220$
   $15 + 120 = 135 \text{ ways}$

② $^6C_5 + ^{10}C_2 = 6 + 45 = 51 \text{ ways}$

③ $^6C_6 + ^{10}C_1 = 1 + 10 = 11 \text{ ways}$

Total ways = 197 ways

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POLITEKNIK
MALAYSIA
KUCHING SARAWAK
KEMENTERIAN PENDIDIKAN TINGGI

JABATAN MATEMATIK, SAINS & KOMPUTER

NAME	Ian King Shi Ping	DURATION	15 MIN	CLO 3
REGISTRATION NO.	0300717F2026			
PROGRAMME/SECTION	STMK / DDT 2B			TOTAL MARKS

INSTRUCTION:

Answer ALL questions.

Question 1 (CLO1, C2)

How many 3-digits numbers can be formed with the digits 0 to 7 if the digits are not repeated. — 3-digits num
— in 0-7
— not repeated

$8 \times 7 \times 6 = 336$

[4 marks]

Question 3 (CLO1, C2)

A committee of 7 persons is to be formed from 10 men and 6 women. In how many ways can this be done when

(a) At least 3 women are included — 4200 ways

[3 marks]

(b) At most 4 women are included — 1200 ways

[3 marks]

Q3.a)

women	men	ways
3	4	$6_{C_3} \times 10_{C_4}$
		$= 4200$ ways

∴ 4200 ways

~ END OF QUESTIONS ~

Q3.b)

women	men	ways
4	3	$6_{C_4} \times 10_{C_3}$
		$= 1200$ ways

∴ 1200 ways

Question 1

0, 1, 2, 3, 4, 5, 6, 7 — 3 digit number.

$$\frac{8}{(8 \text{ ways})} \times \frac{7}{} \times \frac{6}{} = 336 \text{ ways}.$$

Question 2.

(a)

Men	Women	Total
6	1	
5	2	7
4	3	

$^{10}C_6 \times {}^6C_1 = 1260$

$^{10}C_5 \times {}^6C_2 = 3780$

$^{10}C_4 \times {}^6C_3 = 4200$

9240

(b)

Men	woman	Total
3	4	
2	5	7
1	6	

$^{10}C_3 \times {}^6C_4 = 1800$

$^{10}C_2 \times {}^6C_5 = 270$

$^{10}C_1 \times {}^6C_6 = 10$

$^{10}C_0 \times {}^6C_7$

2080

INSTRUCTION:

Answer ALL questions.

Question 1 (CLO1, C2)

How many 3-digits numbers can be formed with the digits 0 to 7 if the digits are not repeated.

$$8 \times 7 \times 6 = 336$$
numbers

[4 marks]

Question 3 (CLO1, C2)

A committee of 7 persons is to be formed from 10 men and 6 women. In how many ways can this be done when

   (a) At least 3 women are included

[3 marks]

   (b) At most 4 women are included

[3 marks]

~ END OF QUESTIONS ~

Men	Women	ways
4	3	

a) $^{10}C_4 \times {}^6C_3 = 4200$ ways

b) Men | women

$^6C_4 \; {}^{10}C_3 = 120$ ways

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JABATAN MATEMATIK, SAINS & KOMPUTER

NAME	Amelda Jocelyn	DURATION	15 MIN	CLO 3	
REGISTRATION NO.	06DDI17F8040				
PROGRAMME/SECTION	DDT2B/S2			TOTAL MARKS	

INSTRUCTION:

Answer ALL questions.

Question 1 (CLO1, C2)

How many 3-digits numbers can be formed with the digits 0 to 7 if the digits are not repeated.

$$\frac{1 \times 8 \times 3}{} = 6$$

[4 marks]

Question 3 (CLO1, C2)

total = 16

A committee of 7 persons is to be formed from 10 men and 6 women. In how many ways can this be done when

(a) At least 3 women are included

$6 \times 5 \times 4 = 120$

$\frac{6i}{3i} = 120$

[3 marks]

(b) At most 4 women are included

$6_{P_4} = 340$

[3 marks]

~ END OF QUESTIONS ~