CM12004: Problem Sheet

	17	17	D		D		ı		
	X	Y	P	Q	$P \rightarrow$	Q			
1. (i)	0	0	0	1	1				
	0	1	1	1	1		conclusion: neither		
	1	0	1	1	1				
	1	1	1	0	0				
(ii)	X	Y	P	Q	$P \rightarrow$	\overline{Q}			
	0	0	0	1	1				
	0	1	1	0	0		conclusion: neither		
	1	0	1	0	0				
	1	1	1	0	0				
	X	Y	P	Q	$P \rightarrow$	\overline{Q}]		
(iii)	0	0	1	1	1		conclusion: tautology		
	0	1	1	1	1				
	1	0	0	0	1				
	1	1	1	1	1				
(iv)	X	Y	P	Q	$P \rightarrow$	· Q	conclusion: tautology		
	0	0	1	1	1				
	0	1	1	1	1				
	1	0	1	1	1				
	1	1	0	0	1				
	X	Y	Z	P		P –			
(v)	0	0	0	0		$\frac{1}{1}$	conclusion: tautology		
	$\begin{vmatrix} 0 \\ 0 \end{vmatrix}$	0	$\begin{vmatrix} 0 \\ 1 \end{vmatrix}$	$\begin{vmatrix} 0 \\ 0 \end{vmatrix}$		1			
	$\begin{bmatrix} 0 \\ 0 \end{bmatrix}$	1	0	$\begin{vmatrix} 0 \\ 0 \end{vmatrix}$		1			
	0	1	$\begin{vmatrix} 0 \\ 1 \end{vmatrix}$	$\begin{vmatrix} 0 \\ 0 \end{vmatrix}$		1			
	1	0	0	0		1			
	1	0	1	1		1			
	1	1	0	1		1			
	1	1	1	1		1			
(vi)	X	Y	P 1	Q	$P \rightarrow$	Q	conclusion: neither		
	0	0	1	1	1				
	$\begin{vmatrix} 0 \\ 1 \end{vmatrix}$	1	1	1	1		con	conclusion: neitner	
	1	0	0	1	1				
		1	1	0	0				

- (vii)
- (viii)
- 2. (i)
 - (ii)
 - (iii)
- 3. (a) (i)
 - (ii)
 - (iii)
 - (b) (i)
 - (ii)
 - (iii)
- 4. (i)
 - (ii)
 - (iii)
 - (iv)
 - (v)
 - (vi)
 - (vii)
 - (viii)
- 5. (a)
 - (b)
 - (c)
- 6. (a)
- 2⁰ • 2^{0}
 - $2^{\{0\}\cup\{1\}}$
 - $2^{\{\emptyset,0,1\}}$ $2^{2^{\{0,1\}}}$

 - (b) (i) (ii)