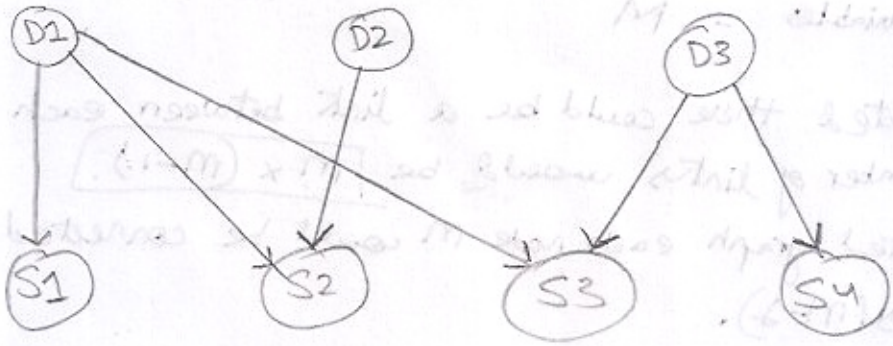
2 Bayesian Networks.

i) a)



b) $P(D1, D2, D3, S1, S2, S3, S4) =$

$$P(D1)\,P(D2)\,P(D3)\,P(S1|D1)\,P(S2|D1,D2)\,P(S3|D1,D3)\,P(S4|D3)$$

c)

$P(D1)$	:	1	$P(S1\|D1)$	: 2
$P(D2)$	:	1	$P(S2\|D1)$	: 2
$P(D3)$	:	1	$P(S2\|D2)$	: 2
			$P(S3\|D1)$	: 2
			$P(S3\|D3)$	: 2
			$P(S4\|D3)$	: 2

Total number of independent parameters.

$1+1+1+2+2+2+2+2+2 = \boxed{15}$

d) Total No. of Random Variable : 7

Assuming each parent is boolean that means they can take 2 values.

$2^K - 1$ [K = random variable]

$2^7 - 1 = 128 - 1 = \boxed{127}$ independent parameters would be required