M1.(a) (i)   D to inv. output, ✓
              CK to inv. output, ✓
              Resets together ✓
              label astable input ✓
              three labelled outputs ✓

5

      (ii)   AND gate, ✓
              output to Reset, ✓
              inputs from Y and Z ✓

3

(b)

Binary counter output		Dice output	
Denary	Binary Z Y X	Dice number	Lamps on
0	0 0 0	1	D
1	0 0 1	2	A
2	0 1 0	3	D, A
3	0 1 1	4	A, C
4	1 0 0	5	A, C, D
5	1 0 1	6	A, B, C

one per correct answer ✓ ✓ ✓ ✓ ✓

5

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