

Q1	Model Solution – 25 Marks	Marking Notes
(a)		<p>MS (0, 3, 4, 5)</p> <p>LPC: Some work of merit eg any correct probabilities given on the tree diagram</p> <p>HPC: Fully correct tree diagram with one or two mistakes</p>
(b)	$P(\text{Exactly one defect}) = 0.03 \times 0.3 + 0.97 \times 0.02$ $= 0.009 + 0.0194$ $= 0.0284$	<p>MS (0, 3, 4, 5)</p> <p>LPC: Work of merit to find answer</p> <p>HPC: One error in calculation</p>
(c)	$P(\text{No defects}) = (0.97) \times (0.98) \times (1 - 0.05)$ $= 0.90307$	<p>MS (0, 3, 4, 5)</p> <p>LPC: Work of merit to find answer</p> <p>HPC: One error in calculation</p> <p>**4 marks for answer rounded incorrectly**</p>
(d)	$P(\text{Exactly one defect}) =$ $= (0.97 \times 0.02 \times 0.95) + (0.03 \times 0.3 \times 0.95) + (0.97 \times 0.98 \times 0.05)$ $= 0.07451$	<p>MS (0, 4, 6, 8, 10)</p> <p>LPC: Work of merit eg one bracket correct</p> <p>MPC: Two elements correct</p> <p>HPC: Correct method but 1 error in calculation</p> <p>**9 marks for answer rounded incorrectly**</p>