(a) Sensitivity: $TP = P(D=1 \mid R=1) = 99\% \Rightarrow FN = 1\%$

Specificity: $TN = P(D=0 \mid R=0) = 98\% \Rightarrow FP = 2\%$

(i) $P(D=1 \mid H_0) = P(D=1 \mid R=0) = FP = 2\%$

(ii) $P(R=0 \mid D=1) = FDP = \frac{2}{99+2} = \frac{2}{101} = 1.98\%$

(iii)

$$P(D_1 \cap D_2 \mid R) = P(D_1 \mid R)\, P(D_2 \mid R)$$

WANT $P(D_2=1 \mid D_1=1)$

$$P(D_2=1 \mid D_1=1) = \frac{P(D_1=1 \cap D_2=1)}{P(D_1=1)} =$$

$$P(D_1=1 \cap D_2=1 \mid R=1)\, P(R=1) + P(D_1=1 \cap D_2=1 \mid R=0) \cdot P(R=0)$$